

See C 3, 6, 7, 8, 9, 10

+

TM 11-5815-205-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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OPERATOR'S, ORGANIZATIONAL
FIELD, AND DEPOT MAINTENANCE
TELETYPEWRITER CENTRAL
OFFICE AN/MGC-17



HEADQUARTERS, DEPARTMENT OF THE ARMY
NOVEMBER 1959

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WARNING

HIGH VOLTAGE
is used in
this equipment.

DEATH ON CONTACT
may result if safety precautions
are not observed.

DANGEROUS POTENTIALS
exist in the following units:

Ac Power Duct

Communication Security Equipment TSEC/KW-9 (KAM-10/TSEC)

POWER DISTRIBUTION PANEL

SIGNAL & POWER ENTRANCE Box

Signal Duct

Teletypewriter Reperforator-Transmitter TT-76(*)/GGC (TM 11-2225)

Teletypewriter TT-4(*)/TG (TM 11-5815-206-12)

Telegraph Terminal TH-5/TG (TM 11-2239)

Telegraph-Telephone Signal Converter TA-182/U (TM 11-2137)

Trailer Mounted Gasoline Engine Generator Set PU-322/G (TM 11-900A)

All operating adjustments of this equipment are made with the power applied. Be careful when working on the wiring side of the equipment.

DON'T TAKE CHANCES

VENTILATION

When occupied, the shelter of Teletypewriter Central Office AN/MGC-17 must be ventilated at all times. Open the blower vents and the air filter cover. Operate both blowers for maximum ventilation. If only one blower is used, close the outside vent of the unused blower.

28 JAN 1970

TM 11-5815-205-15

C 10

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HEADQUARTERS

DEPARTMENT OF THE ARMY

WASHINGTON, D.C., 24 December 1969

mt 1-30-70

**Operator, Organizational, DS, GS, and Depot Maintenance Manual
TELETYPEWRITER CENTRAL OFFICE AN/MGC-17**

M 11-5815-205-15, 2 November 1959, is changed as follows:

Note. The parenthetical reference to previous changes (example: "page 1 of C 6") indicates that pertinent material was published in that changes.

Inside front cover. Add the following to equipment listing:

Telegraph Terminal TH-22/TG (TM 11-5805-356-1).

Page 3, chapter 1 (page 1 of C 6). Below the title chapter 1 change "Note" to read "Notes." Number the existing note "1" and add:

2. Terminal, Telegraph Set TH-22/TG is similar to Terminal, Telegraph Set TH-5/TG. Converter, Telegraph-Telephone Signal Set CV-425/U similar to Converter, Telegraph-Telephone Sig-

nal Set TA-182/U. Information in this manual applies to both sets unless otherwise specified.

Paragraph 2 (page 1 of C 9). Make the following change. Subparagraph c, line 6. Change "MCO 4039.29" to: MCO P4610.19.

Page 4, paragraph 4. Change the word "Note" to "Notes." Number the existing note "1" and add the following:

2. Total power consumed when using the TH-22/TG (20 watts) and the CV-425/U (25 watts) in place of the TH-5/TG and the TA-182/U is 2,738 watts.

Page 11 (page 2 of C 3). Delete figure 6 and substitute new figure 6.

Page 17, paragraph 14. After the last line in the paragraph add:

Line unit C-2894/TG is used on the TH-5/TG only.

Page 21, paragraph 21 (page 2 of C 6). Make the following changes:

Subparagraph *d*. Change the heading to read:

d. Telegraph Terminals TH-5/TG (TM 11-5805-262-12 and TH-22/TG (TM 11-5805-356-12).

Subparagraph *e*. Change heading to read:

e. Telegraph-Telephone Signal Converters TA-182/U (TM 11-5805-247-10) and CV-425/U (TM 11-5805-356-12).

After subparagraph *j* add:

21.1 Differences in Models

(fig. 15.3 and 15.4)

a. Terminal, Telegraph TH-122/TG differs from earlier model Terminal, Telegraph TH-5/TG in the following details.

(1) The TH-22/TG utilizes transistorized circuitry as opposed to tube circuitry in the TH-5/TG.

(2) In addition to the front panel controls, indicators and fuses on the TH-5/TG, the TH-22/TG incorporates the following:

(*a*) A BOOST toggle switch which, when positioned upward, amplifies the break-in signal.

(*b*) A THRESHOLD indicator lamp which indicates a low signal or no signal present at the 4WS/TEL or 2W/R terminals.

(*c*) A BREAK-IN switch, which initiates a break-in function during telegraphic communications over a two-wire line facility.

(*d*) A RESET switch, which disables the alarm circuit and restores the teletypewriter circuit for operation.

(*e*) A three-position screwdriver power switch, which permits either 115-volt ac, 230-volt ac or 26-volt dc operation.

(*f*) A power ON/OFF switch.

(*g*) A power indicator lamp.

(*h*) A MODE ONE/MODE TWO switch which, when positioned to MODE ONE, produces an output rate of 60, 75, or 100 words per minute. When positioned to MODE TWO, an output rate of 200 words per minute is produced.

(*i*) An EXT BAT receptacle for connecting a teletypewriter which provides loop current.

(*j*) A REC receptacle for connecting a teletypewriter which does not provide loop current.

(*k*) A VF-20 switch. In VF position, it produces an output signal frequency of 1232.5 cps; in 20 position it produces a 20 cps signal frequency.

(*l*) 115/230 vac (1/4A) and 26VDG (2A) fuseholders.

(*m*) No perforated heat dissipation area on the front panels.

b. Converter, Telegraph-Telephone CV-425/U differs from earlier model Converter, Telegraph-Telephone TA-182/U in the following details.

(1) The CV-425/U utilizes transistorized circuitry as opposed to tube circuitry in the TA-182/U.

(2) A POWER ON/OFF toggle switch in now on the front panel.

(3) 230-volt ac, as well as 115-volt ac, is used as an operating voltage.

(4) A 1/2-ampere fuse instead of a 1 ampere fuse is used.

(5) There is no perforated heat dissipation on the front panel.

Page 7 of C 3. Delete figure 15.1 and substitute new figure 15.1.

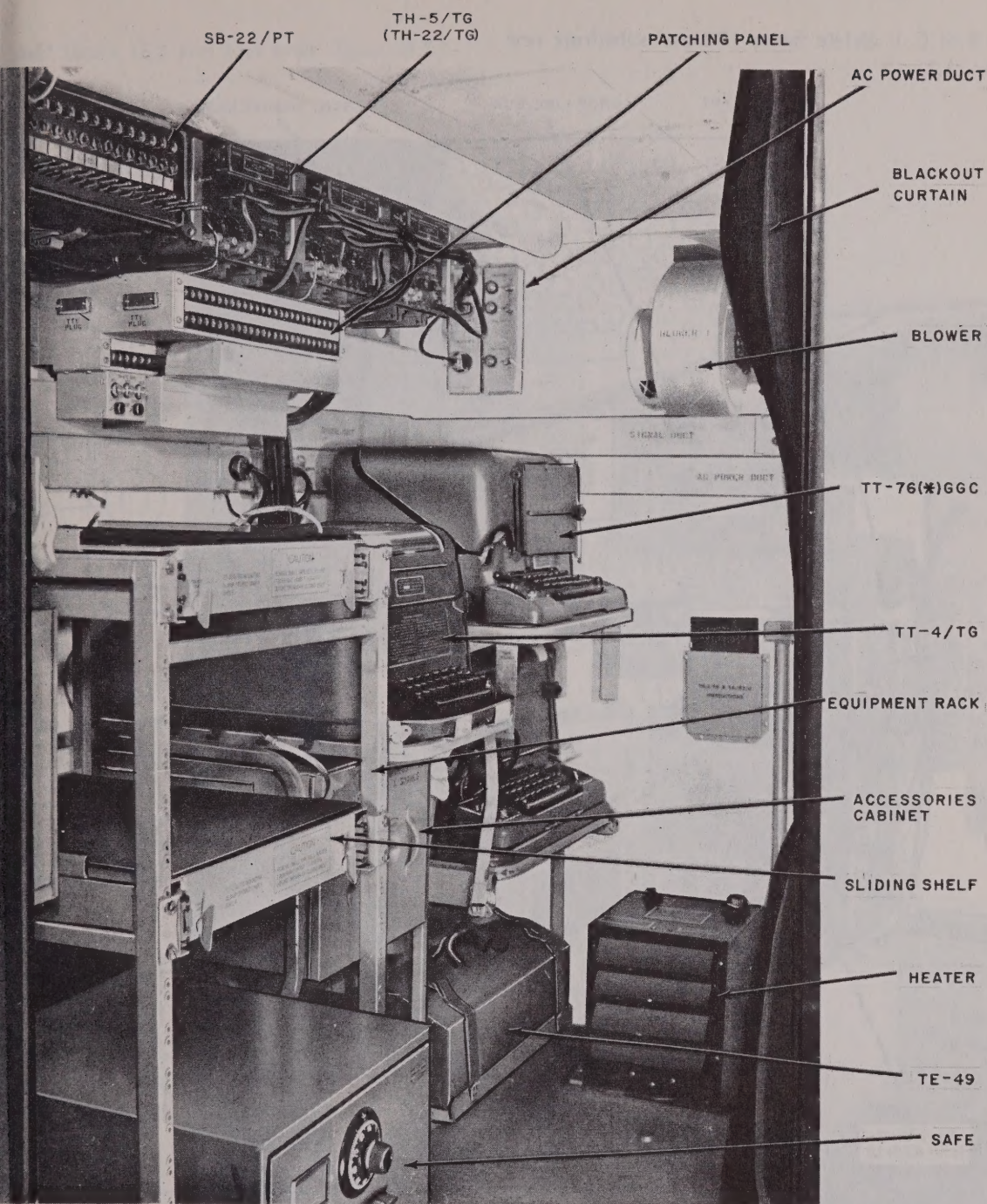


Figure 15.1. Shelter, left side.

TM5815-205-15-C10-3

Page 8 of C 3. Delete figure 15.2 and substitute new figure 15.2.

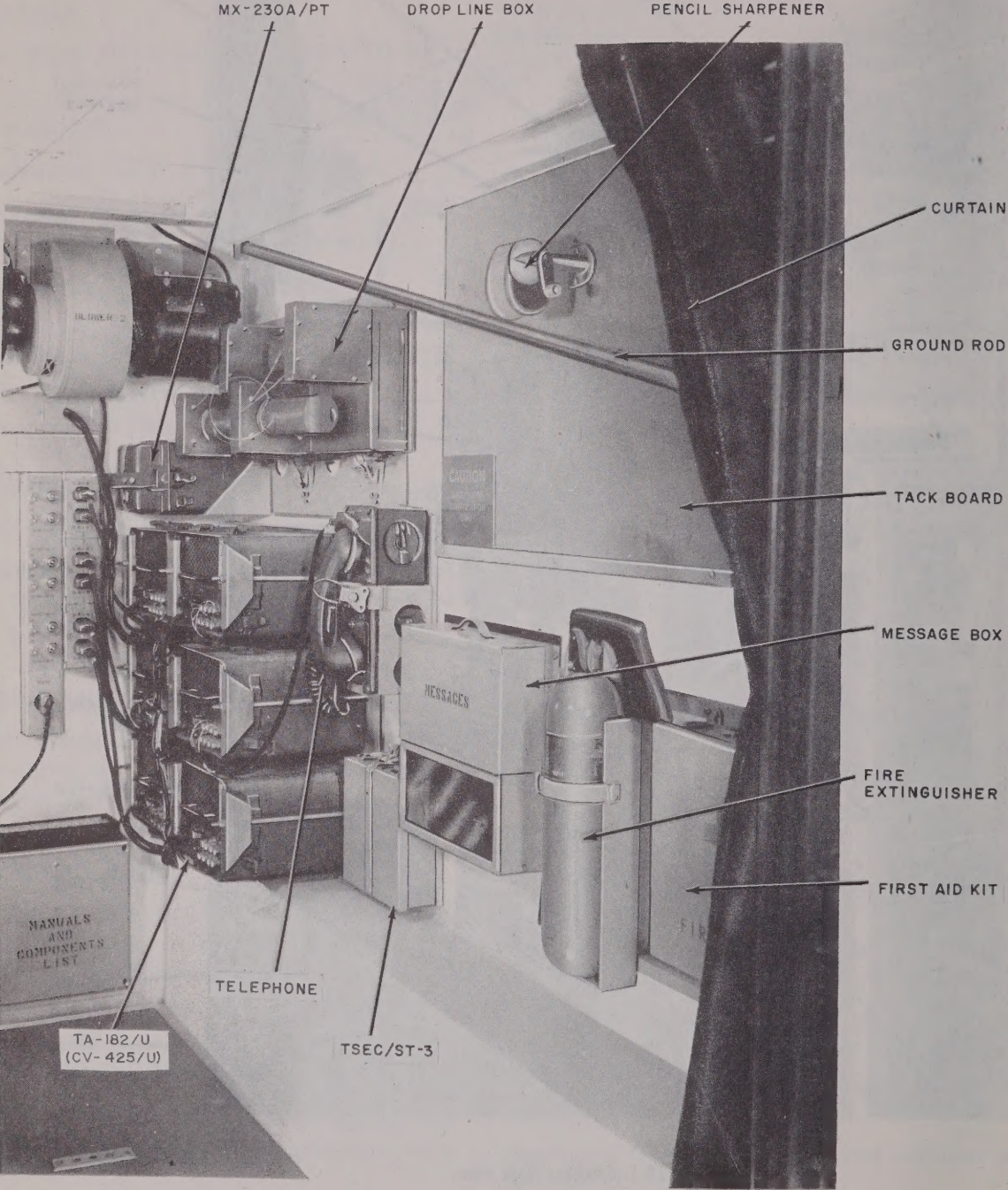
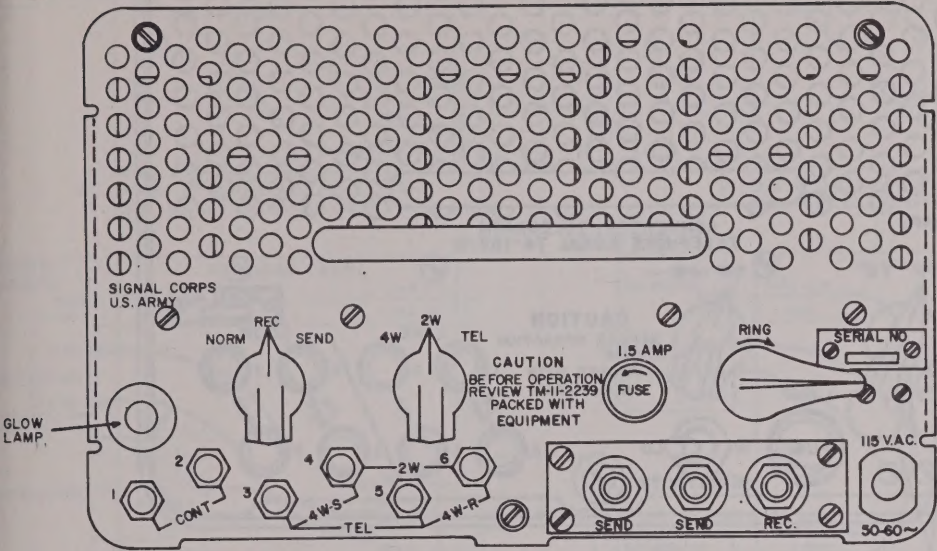


Figure 15.2. Shelter, right side.

TM5815-205-15-C10-4

TH-5/TG



TH-22/TG

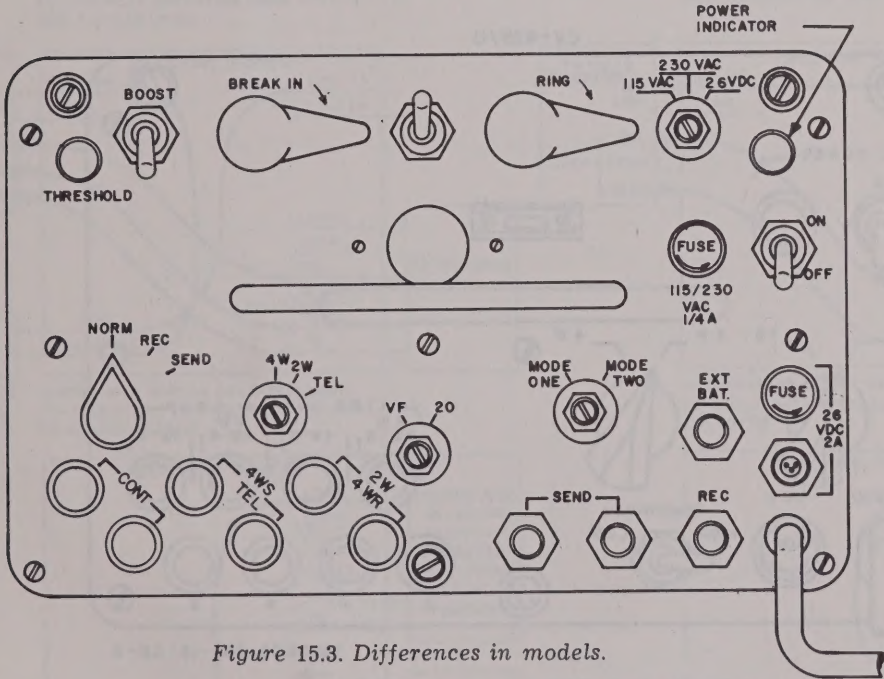
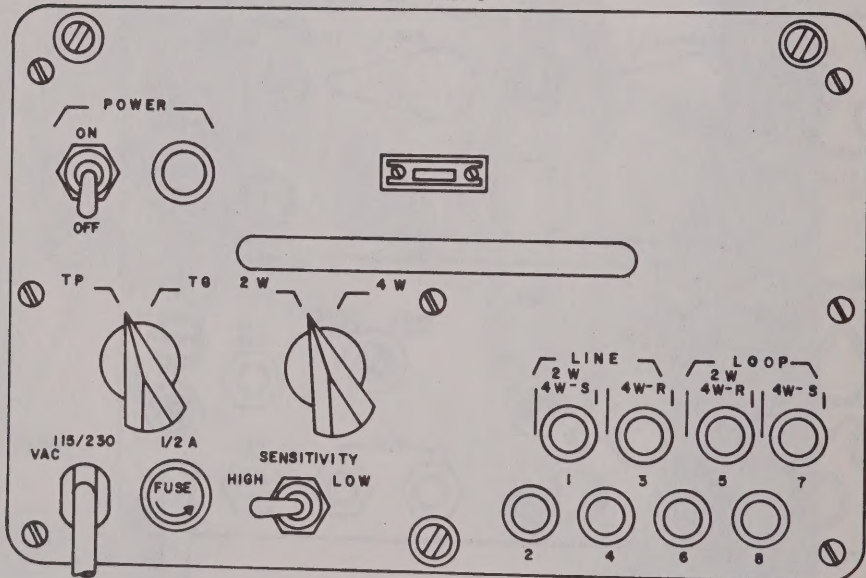
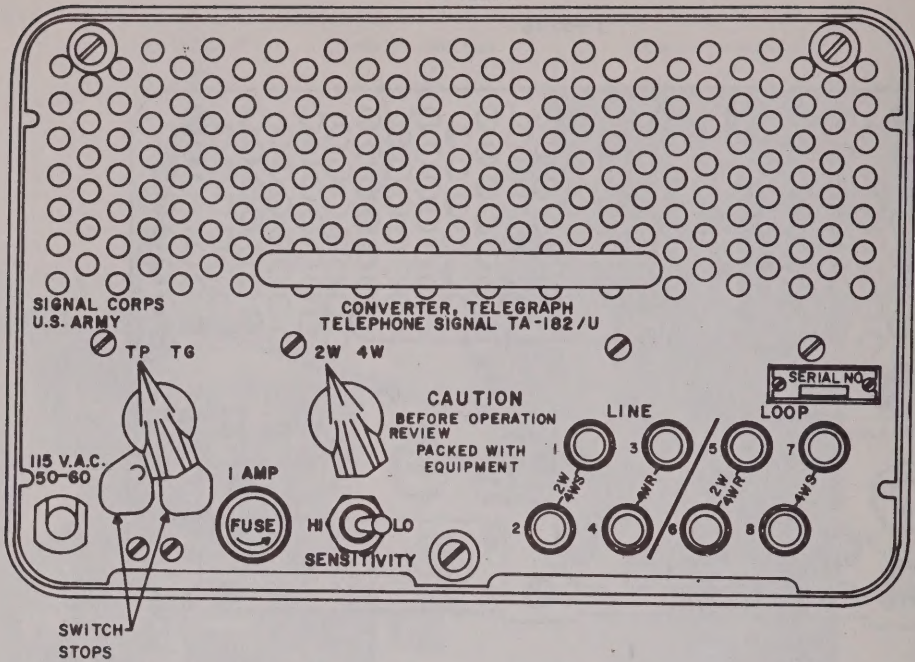


Figure 15.3. Differences in models.

TM5805-204-15-C2-2



TM 5805-285-15-C8-8

Figure 15.4. Differences in models.

Page 23, paragraph 25, line 4. Add the following at the end of the sentence: Line units are used with TH-5/TG only.

Page 29, paragraph 29a (1) (page 2 of C 6). Add the following to the end of the sentence: and CV-425/U (TM 11-5805-356-12).

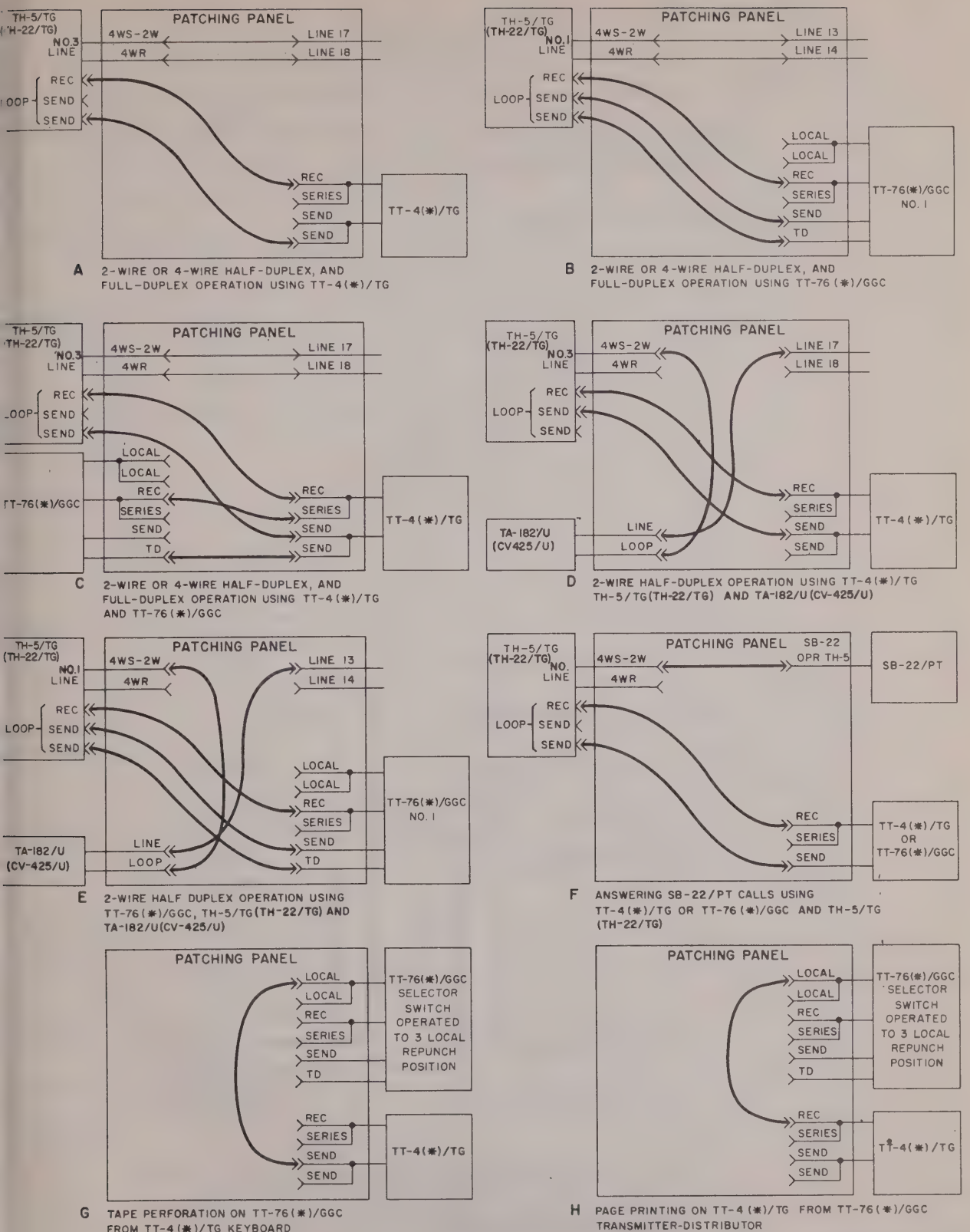
Page 32, paragraph 36. Below the heading add the

following note:

Note: For the TH-22/TG testing procedure, refer to TM 11-5805-356-12.

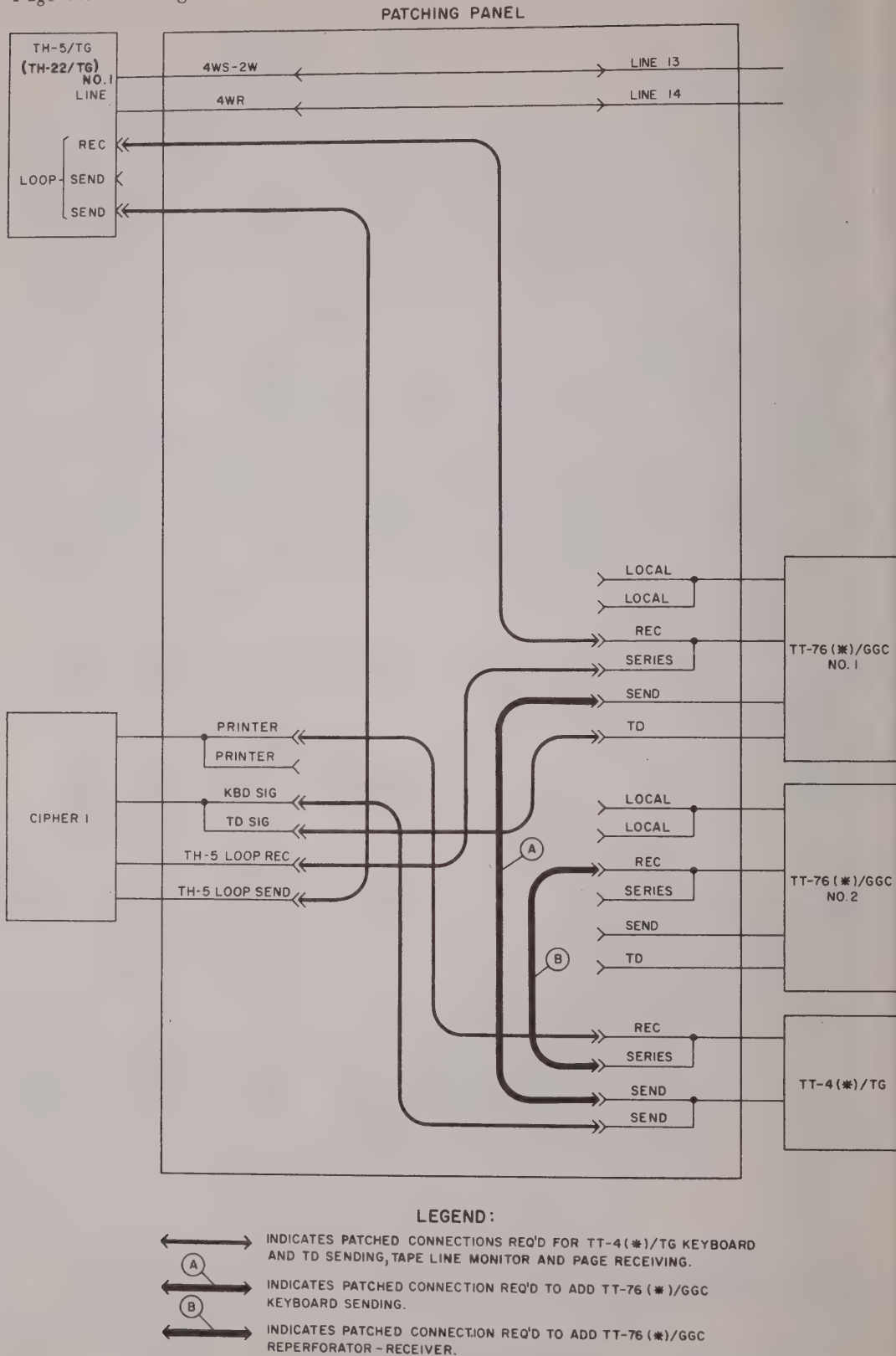
Page 33, paragraph 37a (3), line 1. After "TH-5/TG." Add "only."

Page 44. Delete figure 20 and substitute new figure 20.



TM5815-205-15-C10-5

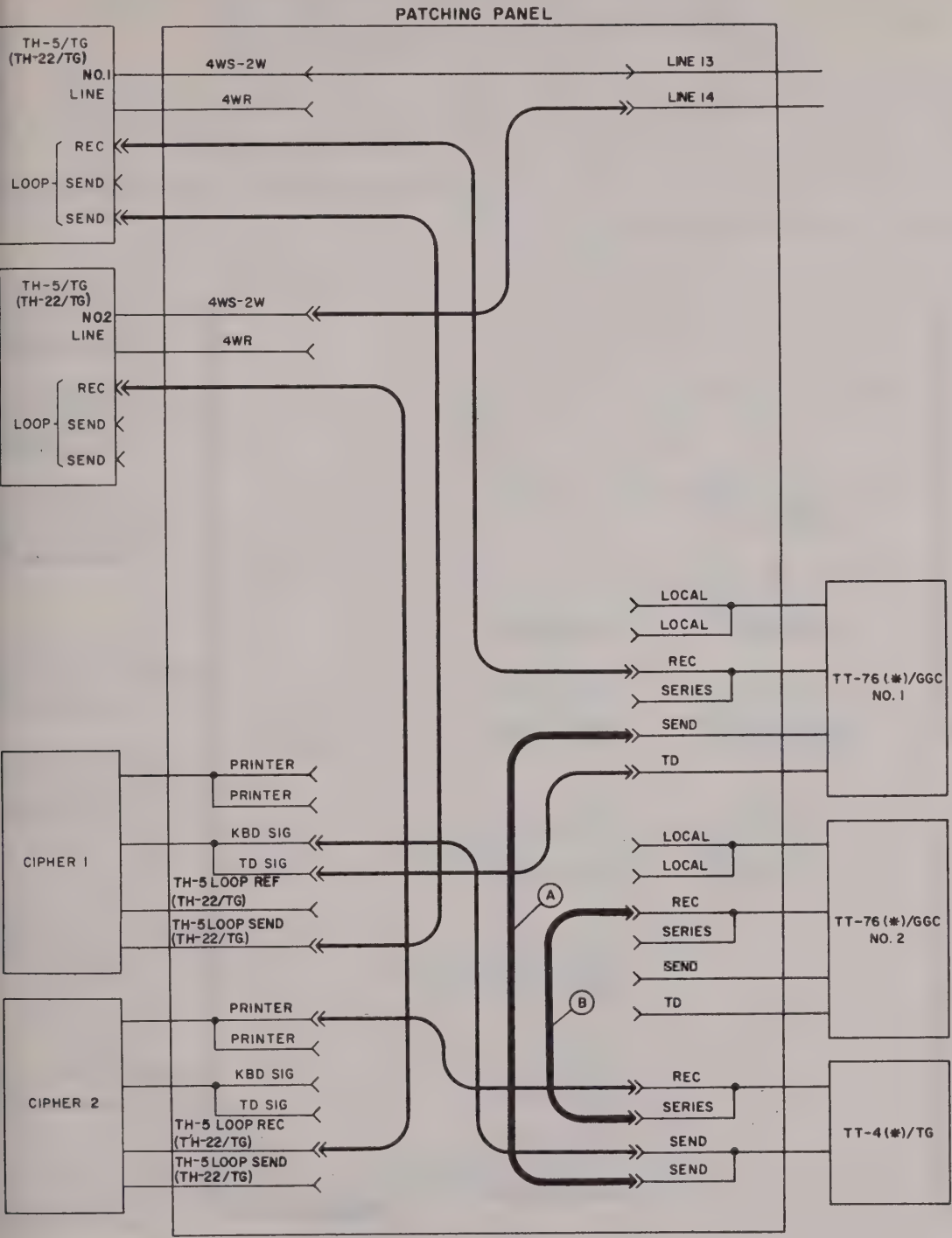
Figure 20. Patching for teletypewriter operation (nonsecure).



TM5815-205-15-C10-6

Figure 21. Half-duplex (two-wire or four-wire) operation, using TSEC/KW-9.

Page 47. Delete figure 22 and substitute new figure 22.



- LEGEND:
- INDICATES PATCHED CONNECTIONS REQ'D FOR TT-4(*)/TG KEYBOARD AND TD SENDING, TAPE LINE MONITOR AND PAGE RECEIVING.
 - INDICATES PATCHED CONNECTION REQ'D TO ADD TT-76(*)/GGC KEYBOARD SENDING.
 - INDICATES PATCHED CONNECTION REQ'D TO ADD TT-76(*)/GGC REPERFORATOR RECEIVER.

TM5915-205-15-C10-7

Figure 22. Full-duplex operation, using TSEC/KW-9 or SSM-33.

Page 49, chapter 3. Make the following changes:

Paragraph 55 (page 4 of C 6), chart, in "Reference" column.

After Sequence No. 19e, add:

e. 1 See TM 11-5805-356-12 for TH-22/TG.

After Sequence No. 19f, add:

f. 1 See TM 11-5805-356-12 for CV-425/U.

Paragraph 56 (page 7 of C 6), in "Reference" column.

After sequence No. 24e, add:

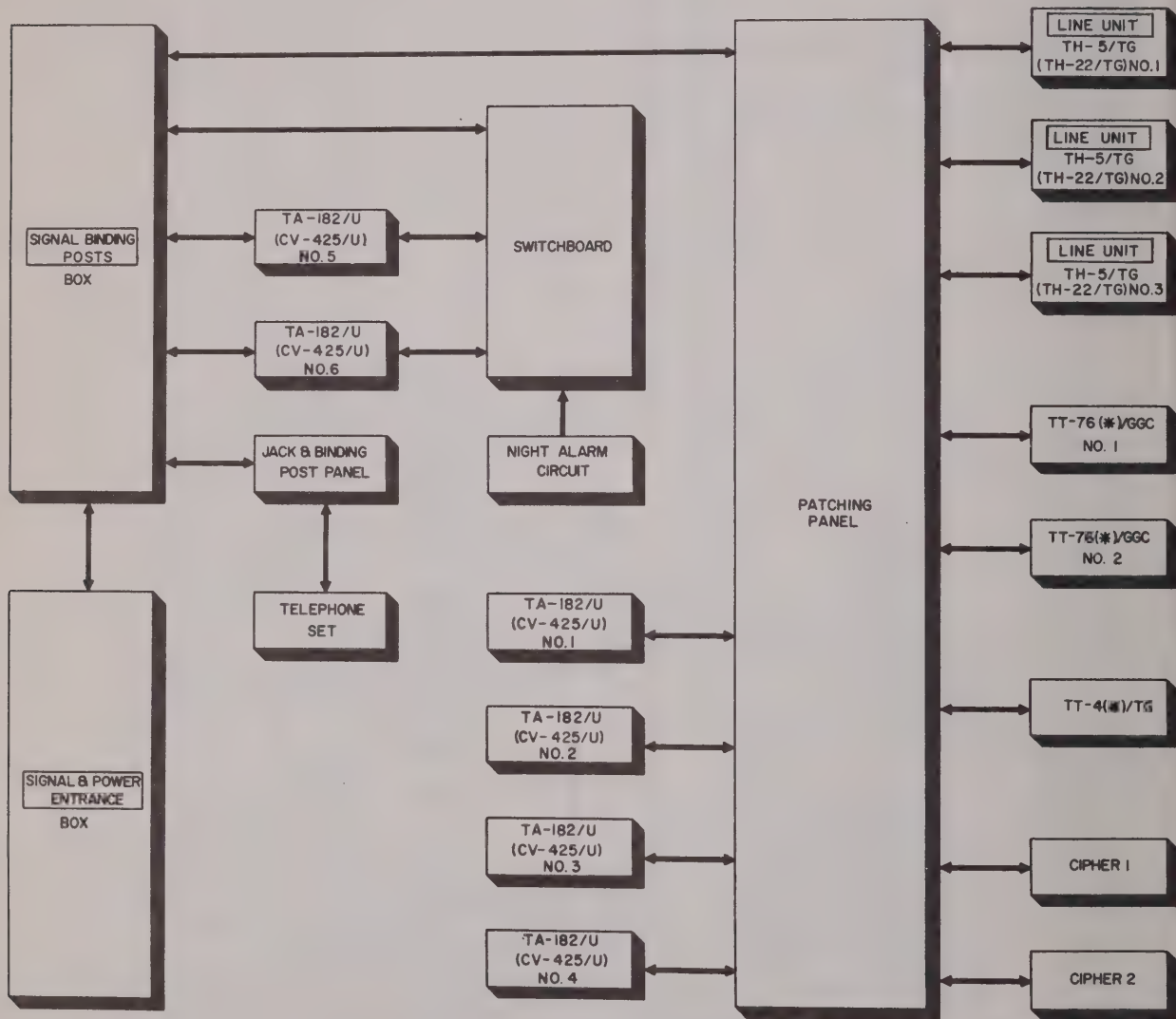
e. 1 See TM 11-5805-356-12 for TH-22/TG.

After Sequence No. 24f, add:

f. 1 See TM 11-5805-356-12 for CV-425/U.

Page 56 (page 15 of C 3) (fold out). Delete figure 26 and substitute new figure 26.

Page 58. Delete figure 25 and substitute new figure 25.



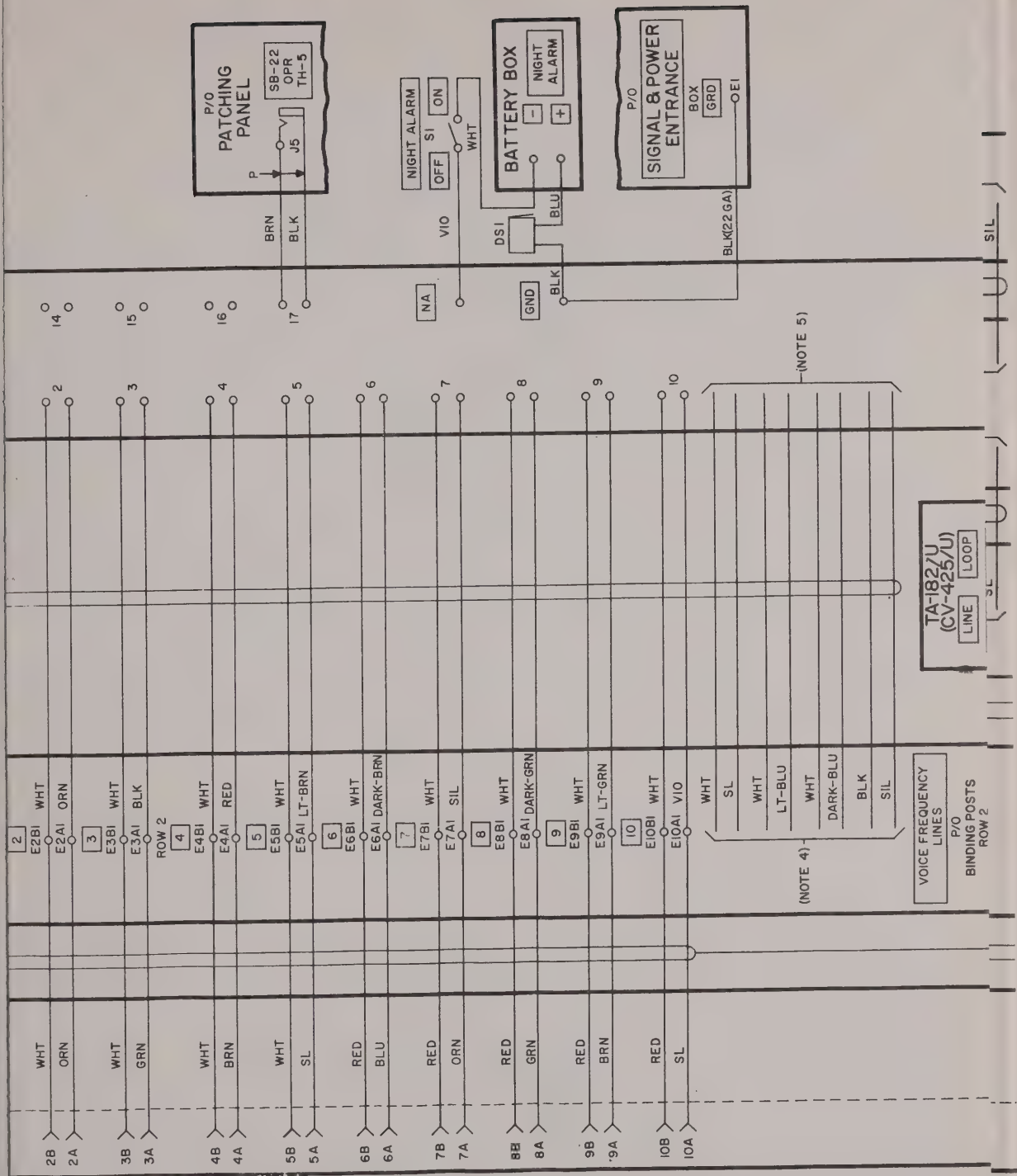
TM5815-205-15-C10-9

Figure 25. AN/MGC-17, signal block diagram.

Page 59, paragraph 63.2c (page 15 of C 3). Add the following sentence to end of subparagraph c. The line unit and strapping instructions are for TH-5/TG

only.

Page 61. Add chapter 6 after chapter 5.



(NOTE 5)

(NOTE 4)

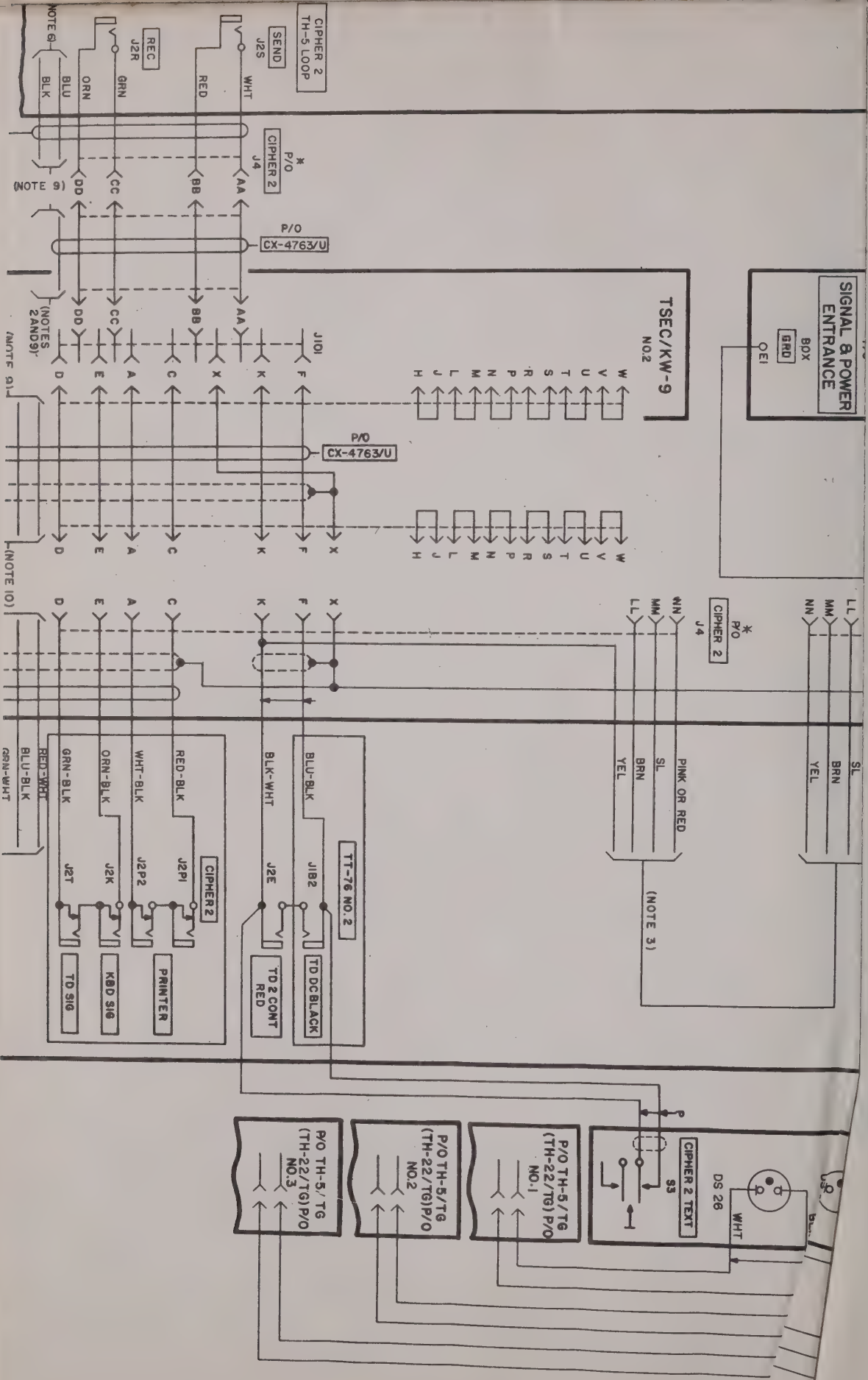
WHT
BLK
BLU
VIO
OFF
ON
NIGHT ALARM

TA-182/U
(CV-425/U)
LINE
LOOP

VOICE FREQUENCY LINES
P/O
BINDING POSTS
ROW 2

WHT
SL
WHT
LT-BLU
WHT
DARK-BLU
BLK
SIL





CHAPTER 6

DEPOT OVERHAUL STANDARDS

FOR

SHELTERS-169/MGC-17

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 95 to 125-volt power supply circuits.

DON'T TAKE CHANCES

Applicability of Depot Overhaul Standards

The tests outlined in the chapter are designed to assure the performance capability of a repaired shelter. Shelters that are to be returned to stock should meet the standards given in these tests.

Applicable References

1. *Repair Standards.* Applicable procedures of the

depots performing these tests and the general standards for repaired signal equipment given in TB SIG 355-1, TB SIG 355-2, and TB SIG 355-3, form a part of the requirements for testing this equipment.

b. Technical Publications. The following technical publications are applicable to the equipment (refer to DA Pam 310-4 for changes in force):

b. Technical Publications (cont):

Title	Number
Depot Inspection Standard for Repaired Signal Equipment	TB SIG 355-1
Depot Inspection Standard for Refinishing Repaired Signal Equipment	TB SIG 355-2
Depot Inspection Standard for Moisture and Fungus Resistant Treatment	TB SIG 355-3
Field and Depot Maintenance Repair Parts and Special Tools List, Ohmmeter ZM-21/U and ZM-21A/U (includes Test Set I-48A and I-48B)	TM 11-6625-298-35P
Equipment Serviceability Criteria for Teletypewriter Central Office AN/MCG-17	TM 11-5815-205-ESC
Depot Maintenance Manual for Fractional Horsepower Motors	TM 11-6105-200-50
Depot Maintenance Manual, Distribution Boxes J-1077/U and J-1077A/U	TM 11-6110-201-50
IT-MCO Universal Automatic Circuit Analyzer, Model 200-B2	Instructional Manual
IT-MCO Series M200, M450, M850 and M2000	Programming Guide
Military Specification, Shelter, Electrical Equipment S-144(*)/G	MIL-S-5206A
Repair Standard, Intercommunication Stations LS-147A/FI, LS-147B/FI, LS-147C/FI, and LS-147D/FI	REP 1342

c. Modification Work Orders. Perform all Modification Work Orders (MWO's) applicable to this equipment before making the tests specified. DA Pam 310-7 lists all applicable MWOs.

d. Drawings. The following drawings are applicable to the equipment.

d. Drawings (cont):

<i>Title</i>	<i>Number</i>
Drawing and Data List: Test Fixtures for Shelter, Electrical Equipment S-169/MGC-17	LSD-DL-17150
Performance Standard for Shelter, Electrical Equipment S-169/MGC-17	LBAD TF 566
Shelter S-169/MGC-17	Matrix Charts

70. Additional Equipment Required

In addition to the test equipment in the Maintenance

Allocation Chart, the following equipment is required:

70. Additional Equipment Required (cont):

<i>Item</i>	<i>Federal stock number</i>	<i>Quantity</i>
DIT-MCO Universal Automatic Circuit Analyzer, Model 200B-2	6625-679-5471	1
Ohmmeter ZM-21A/U	6625-581-2466	1
DIT-MCO Adapter Box per Dwg. LBAD-D-13555	None	1
Input-Output Caable per Dwg. LBAD-D-15903	None	1
DIT-MCO Multiplier Section Model 850-B3	6625-856-1472	1
TA-182/U Adapter Box Assembly per Dwg. LBAD-D-15903	None	6

71. General Test Requirements

When a repaired shelter is being tested, perform tests in sequence and comply with preparatory instructions.

a. Scope of Tests. The following tests will be performed to determine the acceptability of repaired shelters for return to stock:

(1) Physical test and inspection.

(2) Electrical test, power circuits.

(3) Continuity test.

b. Initial Conditions.

(1) Perform all tests at room temperature.

(2) Properly ground all equipment before making power connections.

(3) Remove and retain the protective covers from all binding posts in the signal and power entrance box.

(4) The J-1077(*)/U shall be tested in accordance with TM 11-6110-201-50 (Depot Maintenance Manual, Distribution Boxes J-1077/U and J-1077A/U).

(5) Fording, lifting eye, and water tightness tests shall be performed in accordance with specifications contained in MIL-S-52060A.

(6) Intercommunication Station LS-147D/U shall be tested in accordance with the requirements of Repair Standard REP-342, including Amendment 1.

72. Physical Test and Inspection

The equipment shall meet the mechanical and visual requirements specified in Repair Standards TB S 355-1, -2, and -3.

73. Electrical Test, Power Circuits

a. Preparation for Test.

-) Set all power switches and circuit breakers OFF.
-) Properly ground the shelter.
-) Connect power cable to a 115 volt, 60-Hz, 3-phase, ac power source.

(4) Open blower vents and air filter covers on the outside of the shelter.

b. Operational Test. Test the operation of the shelter ac power input and distribution systems as described in chart below:

(cont).

Control	Position	Indication function
MAIN circuit breaker	ON	Applies power to shelter circuit breakers. Panel voltmeter M1 should read 115 10 volts \pm . Panel ammeter M2 should read 0 ampere.
OVERLOAD circuit breaker	ON	Indicator lamp should glow indicating power application to shelter.
CONVENIENCE RECEPTACLE circuit breaker	ON	Indicator lamp should glow indicating power application to convenience outlets. A voltmeter measurement at convenience receptacles should indicate 115 10 volts \pm .
HEATER circuit breaker	ON	Indicator lamp should glow, indicating power application to heater receptacle.
OFF-HEAT-FAN switch	HEAT	With TEMPERATURE control at mid-position, warm air should radiate from heater. Panel ammeter M2 should indicate 13/5 amperes \pm 20%.
	FAN	Fan should operate normally.
	OFF	Heater should be inoperative.
LIGHTS circuit breaker	ON	Indicator lamp should glow indicating power application to BLACKOUT NORMAL, FLUORESCENT, NEON, and RING switches.
BLACKOUT NORMAL switch	BLACKOUT	With light switches ON, lights should light when door is closed and extinguish when door is opened.
	NORMAL	Lights should operate independently of the door.
FLUORESCENT switch	ON	Fluorescent lights should light
NEON switch	ON	Neon light should light, indicating power application to RING transformer T1.
OPR. POS. circuit breaker	ON	Indicator lamp should glow indicating power application to individual equipment switches.
Individual equipment switches	ON	Equipment indicator lamps should glow. A voltmeter measurement at all equipment outlets should indicate 115 10 \pm volts.
BLOWER 1 circuit breaker	ON	Blower 1 indicator lamp should glow. Blower 1 should operate.
BLOWER 2 circuit breaker	ON	Blower 2 indicator lamp should glow. Blower 2 should operate.

Note. After completing all tests turn all switches and circuit breakers off.

74. Continuity Test

a. Automatic Test, Signal Circuits. Automatic tests shall be made using the DIT-MCO Universal Automatic Circuit Analyzer, Model 200-B2 or suitable equivalent. All signal circuit wiring must pass a continuity test of 6 ohms or less at 0.5 ampere and an insulation resistance test of 50 megohms or greater at 500 volts dc. Refer to LBAD TF 566, Performance Standard for the S-169/MGC-17.

Warning. Receptacle A of the DIT-MCO Analyzer carries lethal voltages of 500 volts. BE CAREFUL!

(1) Test preparation.

(a) Install the binding post adapter fixture (LBAD-D-17153 and 17154) on appropriate binding posts: (It may be necessary to spread clips slightly to ease the installation. Press fixture firmly until clips slide all the way down over the binding posts.

(b) Insert all plugs on the adapter cables into the corresponding sockets on the DIT-MCO adapter box (LBAD-D-13555) except P21B, P22B, P21C, and P22C, which are to be inserted into S14, S15, S34, and S35, respectively. (Plugs P26B, P27B, P26C, and P27C, are not used at this time.)

(c) Connect the analyzer to 115-volt, 60-Hz, single-phase power source.

(d) Install the (6) TA-182/U fixtures (LBAD-D-15903) in the racks provided and connect them to shelter wiring (fig. 26).

(e) Connect the SB-22/PT fixture (LBAD-D-17163, sheet 2 of 2) to signal wiring as indicated on the fixture drawing and figures 6 and 26.

(f) Insert phone plugs on cable No. 1 (LBAD-D-17195) in the patch panel (fig. 14) in accordance with the drawings as amended by the following:

1. Rev. No. 1 to Series Rev. No. 1 (left).
2. LOCAL-76-1 to TT-76 No. 1 (left) local
3. No. 2 or No. 3 to Left No. 2.

(g) Insert phone plugs on cable No. 2 (LBAD-D-17162) into patch panel (fig. 14) in accordance with drawings as amended by the following:

1. Printer C1 to Cipher 1 Printer (left).
2. Printer C2-5L to Cipher 2 Printer (left). (Legend: C1 - Cipher 1; 5L-TH-5 Loop).

(h) Insert phone plugs on cable No. 3 (LBAD-C-17159) into patch panel (fig. 14) in accordance with drawing as amended by the following:

1. Rev. No. 1 to Series Rev. No. 1 (right)
2. Insert LOCAL-76 into TT-76 No. 1 (left) LOCAL.
3. SENT 4 - not yet used.
4. REC 4 of REC Series - not yet used
5. No. 2 or No. 3 - not yet used.

(i) Insert the phone plugs on jack panel into cable No. 1 (LBAD-C-17160) as indicated below (refer to figures 14 and 26):

74 (i) (cont).

Plug designation	Jack designation
Line 1	TA-182 Line 1
Line 2	TA-182 Line 2
Line 3	TA-182 Line 3
Line 4	TA-182 Line 4
Loop 1	TA-182 Loop 1
Loop 2	TA-182 Loop 2
Loop 3	TA-182 Loop 3
Loop 4	TA-182 Loop 4
Line 13	Line 13
Line 14	Line 14
Line 15	Line 15
Line 16	Line 16
Line 17	Line 17
Line 18	Line 18

(j) Insert two (2) shorted plugs into the TD DC BLACK jacks of TT-76's No. 1 and No. 2 positions 1 and 2 (fig. 14).

(k) Connect the cipher input cable (LBAD-D-17162) to the cipher receptacles (fig. 6) and connect the 26-pair connector (LBAD-D-17163 sheet of 2) to its mating receptacle in the signal entrance box (fig. 12).

(2) Test procedure.

(a) *Test one.* Place Matrix chart No. 1 on the analyzer. Perform LO- and HI-VOLTAGE tests according to the analyzer instruction manual.

(b) *Test two.* Place Matrix Chart No. 2 on the analyzer and perform LO- and HI-VOLTAGE tests.

(c) Test three.

1. Place Matrix Chart No. 3 on the analyzer

2. Remove the jack panel input cable phone
 plugs listed below and reinsert as indicated.
 g (2) (c) (cont).

Move phone plug	To jack designated
Line 13	TH-5 Line No. 1 BLACK
Line 14	TH-5 Line No. 1 RED
Line 15	TH-5 Line No. 2 BLACK
Line 16	TH-5 Line No. 2 RED
Line 17	TH-5 Line No. 3 BLACK
Line 18	TH-5 Line No. 3 RED

3. Disconnect the 11-pin connectors from
 A-182/U test fixtures 5 and 6.

4. Perform LO- and HI-VOLTAGE tests
 according to the instruction manual.

(d) Test four.

1. Place Matrix chart No. 4 on the analyzer.

2. Remove the jack panel input cable phone
 plugs listed below and reinsert as indicated (fig. 14
 and 26):

a (2) (d) (cont).

Move phone plug	From jack	To jack
Line 13	TH-5 line No. 1 BLACK	TH-5 line No. 1 BRIDGE
Line 15	TH-5 line No. 2 BLACK	TH-5 line No. 2 BRIDGE
Line 17	TH-5 line No. 3 BLACK	TH-5 line No. 3 BRIDGE

3. Insert patch cords CX-4768/U (10") as
 indicated below (fig. 14 and 26):

a (2) (f) (cont).

Move phone plug	From jack designated	To jack
TC-76 - 1 or REC Series 76	TT-76 No. 1 REC	TH-76 No. 1 REC Series
cal 76	TT-76 No. 1 (left) LOCAL	TT-76 No. 1 (right) LOCAL
TC - 4 or REC Series 4	TT-4 REC	TT-4 REC SERIES
2 or No. 3	TT-76 No. 1 (right) LOCAL	TT-76 No. 1 REC

3. Set switch number 1 on the jack panel
 test cable to position 7.

4. Perform LO- and HI-VOLTAGE tests.

(g) Test seven.

1. Place Matrix chart No. 7 on the analyzer.

2. Move the following 11-pin connectors on
 the DIT-MCO adapter box as indicated at right:

Patch from LINE	To TH-5 LINE
13	No. 1 4WS 2W
14	No. 1 4WR
15	No. 2 4WS 2W
16	No. 2 4WR
17	No. 3 4WS 2W
18	No. 3 4WR

4. Perform LO- and HI-VOLTAGE test ac-
 cording to the analyzer instruction manual.

(c) Test five.

1. Place Matrix chart No. 5 on the analyzer.

2. Move the 11-pin connectors on the adapt-
 er box (LBAD-D-13555) as indicated below:

74a (2) (e) 2 (cont).

Move plug	From socket	To socket
21A	21	14
22A	22	15
26A	26	----
27A	27	----
21B	14	21
22B	15	22
26B	----	26
27B	----	27

3. Place switches 1, 2, and 3 on jack panel
 output cable position 1.

4. Perform LO- and HI-VOLTAGE tests.

(f) Test six.

1. Place Matrix chart No. 6 on the analyzer.

2. Move the jack panel test cable (cable No.
 1) phone plugs as indicated below (fig. 14 and 20):

74g (2) (g) (cont).

Move plug	From socket	To socket
21B	21	34
22B	22	35
26B	26	----
27B	27	----
21C	34	21
22C	35	22

3. Insert plugs 26C and 27C in sockets 26 and 27 of the adapter box.

4. Replace plugs Send-4, REC Red-4, and Send Blk-4 of the jack panel test (cable number 1) with the correspondingly numbered plugs of the jack panel test cable (cable number 3).

5. Remove the Rec-4 or Rec Series-4 phone plug cable number 1.

6. Insert the Rec-4 or Rec Series-4 phone

plug cable number 3 into the jack designated T (fig. 14).

7. Place switch number to 3 of cable number 3 position.

8. Perform LO- and HI-VOLTAGE tests

(h) *Test eight.*

1. Place Matrix chart No. 8 on the analyzer.

2. Move the following phone plugs of jack panel test cable (cable number 3) indicated

74a (2) (h) 2 (cont).

Move phone plug	From jack	To jack
Rec 76-2 or Rec Series 76-2	TT-7 No. 2 REC	TT-76 No. 2 REC SERIES
Local 76-2	TT-76 No. 2 LOCAL (left)	TT-76 No. 2 LOCAL (right)
Rec 4 or Rec Series 4 No. 2 or No. 3	TT-4 REC	TT-4 REC SERIES

3. Place switch number 3 of the jack panel test cable (cable number 3) to position 2.

4. Perform LO- and HI-VOLTAGE tests.

(i) *Test nine.*

1. Place Matrix chart No. 9 on the analyzer.

2. Perform LO- and HI-VOLTAGE tests.

(j) *Test ten.*

1. Place Matrix chart No. 10 on the analyzer.

2. Place switch number 2 of the jack panel test cable (cable number 3).

3. Move the following phone plugs of jack panel output cable number 1 (cable number 2) indicated below:

74a (2) (j) 3 (cont).

Move plug	From jack	To jack
Printer C1	PRINTER CIPHER 1 (left)	PRINTER CIPHER 1 (right)
Printer C2	PRINTER CIPHER 2 (left)	PRINTER CIPHER 2 (right)
KBD Sig C2 or TD Sig C2	KBD SIG CIPHER 2	TD SIG CIPHER 1
TD - CONT RED or DC BLK	TD 1 CONT RED	TD DC BLK TT-76 (position 1)
TD 2 CONT RED or DC BLK	TD 2 CONT RED	TD DC BLK TT-76 (position 2)
Shorting plug	TD DC BLK TT-76 (position 1)	TD 1 CONT RED
Shorting plug	TD DC BLK TT-76 (position 2)	TF 2 CONT RED

4. Perform LO- and HI-VOLTAGE tests.

5. Remove all test cables and fixtures from the shelter, including shelter ground.

b. *Manual Test, Signal Wiring.*

(1) Using multimeter TS-352(*)/U or suitable equivalent, measure the resistance between the points on the patch panels listed below, while performing the indicated operations:

Warning. Disconnect the power cable to prevent possible electrical shock.

74b. (1) (cont).

From pin	On receptacle	To pin	On receptacle	Operation
F	CIPHER 1	K	CIPHER 1	Press CIPHER 1 TEXT
X	CIPHER 1	X	CIPHER 2	None
LL	CIPHER 1	MM	CIPHER 2	None
MM	CIPHER 1	LL	CIPHER 2	None
NN	CIPHER 1	K	CIPHER 2	None
K	CIPHER 2	F	CIPHER 2	Press CIPHER 2 TEXT

- 2) The resistance measured should be less than 100 ohms.
- 3) Using Ohmmeter ZM-21A/U, check the insulation resistance between each point listed below and every other point listed and shelter ground. The insulation resistance in each case should be greater than 50 megohms at 500 volts dc.

Pin

NN

MM

LL

NN

Receptacle

CIPHER 1

CIPHER 1

CIPHER 1

CIPHER 2

APPENDIX I

REFERENCES

The following applicable references are available for the operator and repairmen of Teletypewriter Center Office AN/MGC-17.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U. S. Army Equipment Index of Modification Work Orders.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment
TB SIG 354	Maintenance and Repair Procedures for S-141/G-, S-144/G-, S-280/G-, S-318/G- Type Shelters.
TM 9-213	Painting Instructions for Field Use.
TM 9-2330-202-14F	Operator, Organizational, and Field Maintenance Instructions, Repair Parts and Special Tools List for Trailer, Cargo: $\frac{3}{4}$ -Ton, 2-Wheel, M101 (2320-738-9509 and M101A1 (2330-898-6779); Chassis: Trailer: $\frac{3}{4}$ -Ton 2-Wheel, M116 2330-542-5987) and M116A1 (2330-898-6780).
TM 11-362	Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D, and RL-31E (Including Organizational Repair Parts and Special Tool Lists).
TM 11-2225-ESC	Equipment Serviceability Criteria for: Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC.
TM 11-5805-201-12	Organizational Maintenance Manual: Telephone Set TA-312/PT.
TM 11-5805-201-20P	Organizational Maintenance Repair Parts and Special Tool Lists: Telephone Set TA-312/PT.
TM 11-5805-201-35	DS, GS, and Depot Maintenance Manual: Telephone Set TA-312/PT.
TM 11-5805-201-35P	Field and Depot Maintenance Repair Parts and Special Tool Lists: Telephone Set TA-312/PT.
TM 11-5805-204-15	Operator, Organizational, DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tool Lists: Panel, Patching, Communication SB-611/MRC.
TM 11-5805-246ESC	Equipment Serviceability Criteria for Telegraph TH-5/TG.
TM 11-5805-246-10	Operator's Manual: Terminal, Telegraph TH-5/TG.
TM 11-5805-246-20	Organizational Maintenance Manual: Terminal, Telegraph TH-5/TG.
TM 11-5805-246-20P	Organizational Maintenance Repair Parts and Special Tool Lists: Terminal, Telegraph TH-5/TG and TH-5A/TG.
TM 11-5805-246-35	DS, GS, and Depot Maintenance Manual: Terminal, Telegraph TH-5/TG.
TM 11-5805-246-35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Terminals, Telegraph TH-5/TG and TH-5A/TG.
TM 11-5805-247-ESC	Equipment Serviceability Criteria for Converter, Telegraph-Telephone Signal TA-182/U.

11-5805-247-12	Organizational Maintenance Manual (Including Repair Parts and Special Tool Lists): Converter, Telegraph-Telephone Signal TA-182/U.
11-5805-247-35	DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tool Lists: Converter, Telegraph-Telephone Signal TA-182/U.
11-5805-262-12	Operator's and Organizational Maintenance Manual: Switchboards, Telephone, Manual SB-22/PT and SB-22A/PT.
11-5805-262-20P	Organizational Maintenance Repair Parts and Special Tool Lists: Switchboards, Telephone, Manual SB-22/PT and SB-22A/PT.
11-5805-262-35	DS, GS, and Depot Maintenance Manual: Switchboards, Telephone Manual SB-22/PT and SB-22A/PT.
11-5805-262-35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Telephone Manual SB-22/PT and SB-22A/PT.
11-5805-356-12	Operator and Organizational Maintenance Manual Including Repair Parts and Special Tool Lists: Terminal, Telegraph-Telephone AN/TCC-29 (Including Terminal, Telegraph TH-22/TC and Converter, Telegraph-Telephone Signal CV-425/U).
11-5805-356-35	DS, GS, and Depot Maintenance Manual (Including Repair Parts and Special Tool Lists): Terminal, Telegraph-Telephone AN/TCC-29 (Including Terminal, Telegraph TH-22/TG and Converter, Telegraph-Telephone Signal SV-425/U).
11-5810-221-ESC	Equipment Serviceability Criteria for Communications Security Equipment TSEC/KW-7.
11-5810-221-12P	Organizational Maintenance Repair Parts and Special Tool Lists: Communications Security Equipment TSEC/KW-7.
11-5810-221-35P	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Communications Security Equipment TSEC/KW-7.
11-5815-205-ESC	Equipment Serviceability Criteria for Teletypewriter, Central office AN/MRC-17.
11-5815-205-25P	Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Central Teletypewriter Office, AN/MGC-17.
11-5815-206-ESC	Equipment Serviceability Criteria for Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, and TT-335/TG.
11-5815-206-12	Organizational Maintenance Manual: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, TT-335/TG, and TT-537/G.
11-5815-206-20P	Organizational Maintenance Repair Parts and Special Tool Lists: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, and TT-335/TG.
11-5815-206-35	DS, GS, and Depot Maintenance Manual: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, TT-335/TG, and TT-537/G.
11-5815-206-35P/1	DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Set AN/PGC-1 Including Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG, and TT-335/TG.
11-5815-238-12	Organizational Maintenance Manual Including Repair Parts and Special Tool Lists: Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC and TT-76C/GGC.

- TM 11-5815-238-35 DS, GS, and Depot Maintenance Manual: Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC.
- TM 11-5815-238-35P DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Reperforator Transmitters, Teletypewriter TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC.
- TM 11-5815-338-15 Operator, Organizational, DS, GS, and Depot Maintenance Including Repair Parts and Special Tools List: Device, Low Level Signaling TT-523/GGC and TT-523A/GGC.
- TM 11-5930-201-15P Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart: Switch Box SA-331/U.
- TM 11-5935-203-15P Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Receptacle, Electrical U-186A/G and U-186B/G.
- TM 11-5935-212-15P Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Plug, Electrical U-185/G, U-185A/G, and U-185B/G.
- TM 11-5965-206-15P Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Headset-Microphone H-91/U, H-19A/U, Handset-Headset H-144/U, H-144A/U, H-144B/U, H-144C/U, and Headset-Microphone H-210/G.
- TM 11-5965-224-15P Operator, Organizational, Field, and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Handsets H-60/PT and Handsets H-60/PT and H-165/U.
- TM 11-6110-201-15P Operator, Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tools List: Distribution Boxes J-1077/U and J-1077A/U.
- TM 11-6115-206-20P Organizational Maintenance Repair Parts and Special Tool Lists: Power Units PE-75-C, PE-75-D, PE-75-J, PE-75-K, PE-75-T, PE-75-U, PE-75-W, PE-75-AA, PE-75-AB, PE-75-AC, PE-75-AD, PE-75-AE, and PE-75-AF.
- TM 11-6115-206-35P Field and Depot Maintenance Repair Parts and Special Tools List: Power Units PE-75-C, PE-75-D, PE-75-J, PE-75-K, PE-75-T, PE-75-U, PE-75-W, PE-75-AA, PE-75-AB, PE-75-AC, PE-75-AD, PE-75-AE, and PE-75-AF.
- TM 11-6115-225-15P Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Generator Set, Gasoline Engine, Trailer Mounted PU-322/G.
- TM 38-750 Army Equipment Record Procedures.

3, Appendix II, Section II, chart (page 6 of

"Remarks" column, label line 14: "a".

line 15 add:

ee TM-11-5805-356-12 for CV-425/U mainte-
allocations. Under "Remarks" column, (page
7), label next to last line: "a".

last line, add:

ee TM-11-5805-356-12 for TH-22/TG main-
e allocations.

5, appendix II, Section II (page 7 of C 7).
the following changes:

Component	Remarks	
	Delete	Substitute:
PHONE	TM 11-2155	TM 11-5805-201-12
TA-312/TP		
YPE-	TM 11-2225	TM 11-5815-238-12
IR SET AN/		
-3; TELE-		
EWRIER		
ERFORATOR		
NSMITTER		
6/GGC		

Page 69, appendix III. Make the following changes:
Section I, paragraph 4 (page 5 of C 9). Code column
"72143". Manufacturer's name column, change "Fri-
den Inc, Electromode Division" to: The Singer Co.,
Climate Control Division. Section II, Federal Stock
Number Column (page 6 of C 9). Change "5815-
683-5439" to 5815-926-0162.

Page 69, Appendix III (page 6 of C 9), chart, column
(3), line 20. After "TA-182/U" add: or CV-425/U
(5805-985-9088). In column (3), line 11 (page 7 of
C 9). After "TH-5/TG" add: or TH-22/TG (5805-
907-8200).

W. C. WESTMORELAND
General, United States Army
Chief of Staff

Official:

KENNETH G. WICKHAM
Major General, United States Army
The Adjutant General

Distribution;

Active Army:

USASA (2)	USACDCEC (10)
CNGB (1)	Instl (2) except
ACSC-E (2)	Fort Gordon (10)
Dir of Trans (1)	Fort Huachuca (10)
C of Engrs (1)	Fort Carson (25)
TSG (1)	Fort Knox (12)
C of Spt S (1)	WSMR (5)
USAARENBD (2)	Army Dep (2) except
USACDC Agcy (1)	LBAD (14)
USAMC (1)	SAAD (30)
USCONARC (5)	TOAD (14)
ARADCOM (5)	LEAD (7)
ARADCOM Rgn (2)	SHAD (3)
OS Maj Comd (4) except	NAAD (5)
USARYIS (5)	SVAD (5)
LOGCOMD (2) except	CHAD (3)
1st LOGCOMD (10)	ATAD (10)
USAMICOM (4)	Gen Deps (2)
USATECOM (2)	Sig Sec Gen Deps (5)
USASTRATCOM (4)	Sig Dep (12)
USAESC (70)	Sig FLDMS (2)
MDW (1)	USATOPCOM (1)
Armies (2)	USAERDAA (2)
Div (2)	USAERDAW (13)
Corps (2)	USACRREL (2)
1st Cav Div (5)	MAAG (2)
183rd USASA Co (5)	USARMIS (2)
184th USASA Co (5)	USMACV (50)
Svc Colleges (2)	USASETAF (10)
USASCS (20)	Units org under fol TOE:
USASESS (15)	(2 copies each)
USAADS (2)	6-502 11-98 32-56
USAFAS (2)	6-555 11-117 32-57
USAIS (2)	6-556 11-127 32-50
USAES (2)	6-615 11-158 77-10
USAINTS (3)	6-617 11-215 77-10
USATC Armor (2)	11-35 11-217
USATC Inf (2)	11-38 11-225
USAS/TC&FG (2)	11-57 11-227
WRAMC (1)	11-85 11-228
Army Pic Cen (2)	11-86 11-500 (AA-AC)
	11-97 29-102

NG: State AG (3)

USAR: None

For explanation of abbreviations used, see AR 310-50.

24 June 68

20 JUN 1968

27

9

Changes in force: C 3, C 6, C 7 and C 9

TM 11-5815-205-15

*C 9

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9

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 2 May 1968
mt 6-21-68

Operator, Organizational, DS, GS, and Depot Maintenance Manual

TELETYPEWRITER CENTRAL OFFICE AN/MGC-17

310-2-1

TM 11-5815-205-15, 2 November 1959, is changed as follows:

The title of the manual is changed as shown above.

ote. The parenthetical reference to a previous
age (example: "page 5 of C 2") indicates that
tinent material was published in that changes.

age 3, paragraph 1.1 (page 1 of C 6). De-
e and substitute:

Index of Publications

1. DA Pam 310-4. Refer to the latest issue
DA Pam 310-4 to determine whether there
new editions, changes, or additional pub-
ications pertaining to the equipment.

2. DA Pam 310-7. Refer to DA Pam 310-7
determine whether there are modification
rk orders pertaining to the equipment.

Paragraph 2. (As changed by C 8, 22 Apr.
Delete paragraph 2 and substitute:

Forms and Records

1. Reports of Maintenance and Unsatisfac-
y Equipment. Use equipment forms and
ords in accordance with instructions in
1, 38-750.

b. Report of Packaging and Handling Defi-
ciencies. Fill out and forward DD Form 6 (Re-
port of Packaging and Handling Deficiencies)
as prescribed in AR700-58 (Army), NAVSUP
Pub. 378 (Navy), AFR 71-4 (Air Force), and
MCO P4030.29 (Marine Corps).

c. Discrepancy in Shipment Report (DIS-
REP) (SF 361). Fill out and forward Discrep-
ancy in Shipment Report (DISREP) (SF
361) as prescribed in AR 55-38 (Army), NAV-
SUP Pub 459 (Navy), AFM 75-34 (Air Force),
and MCO 4039.29 (Marine Corps).

d. Report of Equipment Manual Improve-
ments. Report of errors, omissions, and rec-
ommendations for improving this publication
by the individual user is encouraged. Reports
should be submitted on DA Form 2028 (Rec-
ommended Changes to DA Publications) and
forwarded direct to Commanding General,
U.S. Army Electronics Command ATTN: AM-
SEL-ME-NMP-AD, Fort Monmouth, N. J.
07703.

*This change supersedes C 8, 22 April 1965.

10/0

APPENDIX I

REFERENCE

The following applicable references are available for the operator and installer of Teletypewriter Central Office AN/MGC-17:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.	TM 11-362	Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D, and RL-31E.
		TM 11-468	Substation Maintenance (TA-236/FT).
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders.	TM 11-5805-201-12	Organizational Maintenance Manual: Telephone Set TA-312/PT.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.	TM 11-5805-204-15	Organizational, DS, GS, and Depot Maintenance Manual: Panel, Patching, Communication SB-611/MRC Including Repair Parts and Special Tool Lists.
TB SIG 354	Maintenance and Repair Procedures for S-141/G-, S-144/G-, S-280/G-, S-318/G- Type Shelters.	TM 11-5805-246-10	Operator's Manual: Terminal, Telegraph TH-5/TG.
TB SIG 364	Field Instructions for Painting and Preserving Electronics Command Equipment.	TM 11-5805-246-20	Organizational Maintenance Manual: Terminal, Telegraph TH-5/TG.
TM 9-213	Painting Instructions for Field Use.		
TM 9-2330-202-14P	Operator, Organizational, and Field Maintenance Instructions, Repair Parts and Special Tool Lists for Trailer, Cargo: 3/4 Ton, 2-Wheel, M101 (2320-738-9509) and M101A1 (2330-898-6779); Chassis: Trailer: 3/4 Ton 2-Wheel M116 (2330-542-5987) and M116A1 (2330-898-6780).	TM 11-5805-247-12	Organizational Maintenance Manual (Including Repair Parts and Special Tool Lists): Converter, Telegraph-Telephone Signal TA-182/U.
		TM 11-5805-262-12	Operator's and Organizational Maintenance Manual: Switchboards Telephone, Manual SB-22/PT and SB-22A/PT.

11-5810- 1-12P	Organizational Maintenance Repair Parts and Special Tool Lists for Communications Security Equipment TSEC/KW-7.		nance Repair Parts and Special Tool Lists: Connectors, Receptacle, Electrical U-186A/G and U-186B/G.
11-5815- 05-25P	Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Teletypewriter Central Office AN /MGC-17.	TM 11-5935- 205-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Receptacle, Electrical U-187/G and U-187A/G.
11-5815- 06-12	Operator and Organizational Maintenance Manual: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG, TT-4B/TG, TT-4C/TG and TT-335/TG.	TM 11-5935- 212-15P	Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Plug, Electrical U-185/G, U-185A/G, and U-185B/G.
11-5815- 08-12	Organizational Maintenance Manual Including Repair Parts and Special Tools List: Teletypewriter Sets AN/GGC-3 and AN/-GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC.	TM 11-5965- 206-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Headset-Microphone H-91/U, H-91A/U; Handset-Headset H-144/U, H-144A/U, H-144B/U, H-144C/U, and Headset-Microphone H-210/G.
11-5815- 08-15	Operator, Organizational, DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tools List: Device, Low Level Signaling TT-523/GGC and TT-523A/GGC.	TM 11-5965- 224-15P	Operator, Organizational, Field, and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Handsets H-60/PT and H-165/U.
11-5930- 01-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart: Switch Box SA-331/U.	TM 11-6110- 201-15P	Operator, Organizational, DS, GS, and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Distribution Boxes J-1077/U and J-1077A/U.
11-5935- 03-15P	Organizational, DS, GS, and Depot Maintenance		

Page 69, appendix III. (As changed by C 8
22 Apr., 65). Delete and substitute:

APPENDIX III

BASIC ISSUE ITEMS

Section I. INTRODUCTION

1. Scope

This appendix lists items comprising an operable equipment and those required for installation, operation, or operator's maintenance for Teletypewriter Central Office AN/MGC-17.

2. Explanation of Columns

The following is a list of explanations of columns in section II.

a. Source, Maintenance, and Recoverability Codes (SMR) Column.

(1) *Source code (S)*. The selection status and source for the listed item is the first code indicated in this column.

The source codes used and their explanations are:

Code	Explanation
P —	Applies to repair parts that are stocked in or supplied from GAS/DSA, or Army supply system, and authorized for use at indicated maintenance categories.
G —	Applies to major assemblies that are procured with PEMA funds for initial issue only to be used as exchange assemblies at DSU and GSU category. These assemblies will not be stocked above DSU and GSU category or returned to depot supply category.

(2) *Maintenance code (M)*. The lowest category of maintenance authorized to install the item is indicated by the second code in

the column. The maintenance category code and its explanation is:

Code	Explanation
C	Operator/Crew

(3) *Recoverability code (R)*. The recoverability code is the third code in the column. It indicates whether unserviceable items should be returned for recovery or salvage. Recoverability codes and their explanations are as follows:

Note. When no code is indicated in the recoverability column, the part will be considered expendable.

Code	Explanation
R —	Applies to repair parts and assemblies that are economically repairable at DSU and GSU activities and normally are furnished by supply on an exchange basis.

b. *Federal Stock Number Column*. This column indicates the Federal stock number for the item.

c. *Description Column*. This column includes the Federal item name and any additional description of the item which may be required. A part number or other reference number is followed by the applicable five-digit Federal Supply Code for Manufacturers (para 4). When required to indicate that the part is used on the models, the numbers 1, 2, 3, 4, etc. are placed under the heading *Usable on Code*. An explanation of the codes used precedes the item in section II of the basic issue items list.

Unit of Issue Column. The unit used on basis of issue (e.g., ea, pr, ft, yd, etc.) is shown in this column.

Quantity Incorporated in Unit Pack Column. Not used.

Quantity Incorporated in Unit Column. The total quantity of the item used in the equipment is given in this column.

Quantity Furnished with Equipment Column. This column lists the quantity of the items supplied for initial operation of the equipment and/or the quantities authorized to be kept on hand by the operator for maintenance of the equipment.

Quantity Authorized Column. Not used.

Illustration Column.

(1) *Figure number (a).* The number of illustration on which the item is shown is indicated in this column.

(2) *Item No. or reference designation.* The reference designation and/or item

number callout used to reference the item on the illustration appears in this column.

3. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.

4. Federal Supply Codes

This paragraph lists the Federal supply code with the associated manufacturer's name.

Code	Manufacturer's Name
10133---	Buss Machine Works Inc.
24455---	General Electric Co, Lamp Division of Consumer Products Group
64959---	Western Electric Co. Inc.
72143---	Friden Inc, Electromode Division
72600---	Dura Corp.
75915---	Littelfuse Inc.
80063---	Army Electronics Command
81349---	Military Specifications
95344---	Economy Cable Grip Co.

SECTION II. BASIC ISSUE ITEMS

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code	(4) UNIT OF ISSUE USABLE ON CODE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY FURN WITH EQUIP	(8) QTY AUTH	(9) ILLUSTRATIONS	
								(a) FIG. NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
G-C-R	5815-683-5439	TELETYPEWRITER CENTRAL, OFFICE AN/MGC-17: (This item is nonexpendable.) TECHNICAL MANUAL TM 11-5815-205-15 Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. NOTE: For technical manuals the quantity indicates the maximum number of copies authorized for packing (or issue) with the equipment. Where a number of these equipments are concentrated in a small area, the quantity on hand may be reduced to the minimum actual requirements as determined by the Commanding Officer of the unit. TECHNICAL MANUAL TM 11-5805-204-15 Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. TECHNICAL BULLETIN TB SIG 354 Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. NOTE: For maintainable equipments listed below, only one each technical manual is authorized.	ea		1	1		1	
G-C-R	5805-263-3326	CONVERTER, TELEGRAPH TELEPHONE SIGNAL TA-182/U: (less case)	ea		6	6		7	
G-C-R		COMMUNICATIONS SECURITY EQUIPMENT TSEC/KW-7	ea		2	2			
G-C-R	5815-937-6146	DEVICE, LOW LEVEL SIGNALING, TT-523/GGC and TT-523A/GGC: (U/w TT76B/GGC)	ea		2	2			
P-C	5960-166-7663	ELECTRON TUBE: 12AU7; 81349	ea			4			
P-C	5960-262-0185	ELECTRON TUBE: 5726/6AL5W; 81349	ea			2			
P-C	5960-827-8782	ELECTRON TUBE: 12AX7; 81349	ea		2	2			
P-C	5920-131-9819	FUSE, CARTRIDGE: (1.6 amp) 31301.6; 75915	ea			10			
P-C	5920-280-1405	FUSE, CARTRIDGE: (1 amp, 250 v) F02G1R00A; 81349	ea			19			
P-C	5920-280-9328	FUSE, CARTRIDGE: (1.5 amp, 125 v) F02DIR50B; 81349	ea			15			
P-C	5920-296-0451	FUSE, CARTRIDGE: (1/8 amp) F02GR125A; 81349	ea			10			
P-C	5920-581-4144	FUSE, CARTRIDGE: (2 amp, 250 v) MDX-2; 10133	ea			7			
G-C-R	6115-577-3370	GENERATOR SET, GASOLINE ENGINE, TRAILER-MOUNTED PU-322/G: (Note: U/w but not part of AN/MGC-17)	ea		1	1		1	
P-C	6240-223-9100	LAMP, GLOW: NE-51; 81349	ea		1	1			
P-C	6240-196-4501	LAMP, INCANDESCENT: SC-D-84552-6; 80063	ea		1	1			
P-C	6240-143-3060	LAMP, INCANDESCENT: Type 636DC-120; 24455	ea			3			
P-C	6240-155-8706	LAMP, INCANDESCENT: MS15571-2; type TB-14; 81349	ea			1			
P-C	6240-892-6102	LAMP, INCANDESCENT: (10 w, 120 v) 10C7/5DC; 24455	ea			1			
P-C	6240-143-3084	LAMP, INCANDESCENT: (15 w, 120 v) (Mounted in equip); 15T7/DC; 24455	ea		1	1			
P-C	7530-223-7966	PAPER, RECORDING, TELETYPEWRITER: UU-P-547C, Type 1, Class 1; 81349	ea			2			
P-C-R	3895-252-6896	REEL UNIT RL-31	ea		1	1			
G-C-R	5815-553-6061	REPERFORATOR, TRANSMITTER TELETYPEWRITER, TT-76B/GGC: (Note: One less chad bin assy)	ea		2	2		6	
P-C	7510-511-6690	RIBBON, PRINTING, TELETYPEWRITER: DDD-R-311D, Type 1, Grade A, Class 1; 81349	ea		3	3			
P-C	6130-076-3545	SEMICONDUCTOR DEVICE, DIODE: SC-C-141342; 80063	ea			2			
P-C	6130-076-3546	SEMICONDUCTOR DEVICE, DIODE: SC-C-141343; 80063	ea			2			
P-C	7530-634-6237	TAPE, TELETYPEWRITER: UU-T-120; 81349	ea			4			
P-C	5805-503-3337	TELEPHONE CIRCUIT TA-222/PT	ea			2			

SECTION II. BASIC ISSUE ITEMS (CONTINUED)

(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code	USABLE ON CODE	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY FURN WITH EQUIP	(8) QTY AUTH	(9) ILLUSTRATIONS	
								(a) FIG. NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
5805-715-6175	TELEPHONE CIRCUIT, TRUNK JACK, TS-236/PT		ea		1	1			
5815-198-4438	TELETYPEWRITER SET TT-4A/TG: (less carry case and immersion cover)		ea		2	2			
5410-647-0117	SHELTER, ELECTRICAL, EQUIPMENT S-169/MGC-17, S-169A, B, C/MGC-17: (S-144)/G Shelter modified)		ea		1	1	5		
5805-257-3602	SWITCHBOARD, TELEPHONE, MANUAL SB-22/PT: (Less cover, Handset 81/U and Operator Telephone Circuit TA-221/PT)		ea		1	1	6		
5805-503-3337	TELEPHONE CIRCUIT, LINE JACK TA-222/PT		ea		2	2	6		
5805-543-0012	TELEPHONE SET TA-312/PT: (Less case)		ea		1	1	7		
5815-198-4438	TELETYPEWRITER SET, TT-4A/TG: (Less carrying case and immersion cover)		ea		2	2			
5805-246-8734	TERMINAL, TELEGRAPH TH-5/TG: (Less cover)		ea		3	3	6		
	SHELTER, ELECTRICAL EQUIPMENT S-169/MGC-17, S-169A, B, C/MGC-17								
	NOTE: Usable on code 1 refers to S-169/MGC-17; 2 refers to S-169A/MGC-17; 3 refers to S-169B/MGC-17; 4 refers to S-169C/MGC-17.								
5935-577-8804	ADAPTER, CONNECTOR UG-1312/U	1,2,3,4	ea		2	2	9		
4210-727-8111	AXE, SINGLE BIT: GGG-P-926B, Type 1, Cl 1, Design C; 81349	1,2,3,4	ea		1	1	9		
7520-953-4807	BASKET, WASTEPAPER: RR-B-181, Style A, Design C; 81349	1,2,3,4	ea		1	1			
6135-120-1020	BATTERY, DRY BA-30	1,2,3,4	ea						BT1 thru BT4
7510-188-6951	BINDER, LOOSE LEAF: UU-B-346, Type 1, Grade E; 81349	1,2,3,4	ea		2	2			
4140-070-4499	BLOWER ASSEMBLY: SM-D-468178; 80063	4	ea		1	1	8		
7920-178-8315	BRUSH, DUSTING: H-B-201; Class B; 81349	1,2,3,4	ea		1	1	9		
7116-045-3453	CABINET, SAFE: SM-B-370868; 80063	1,2,3,4	ea		1	1	15.1		
5995-823-2715	CABLE ASSEMBLY AND REEL: (C/o Cable Assembly CX-4566A/G (250 ft) wound on Reel RC-435/U)	1,2,3,4	ea		2	2	10		
5995-889-1229	CABLE ASSEMBLY, POWER, ELECTRICAL, CX-4693A/U: (25 ft) SM-DL-335423; 80063	1,2,3,4	ea		2	2			
5995-889-1228	CABLE ASSEMBLY, POWER, ELECTRICAL, CX-4694A/U: (100 ft) SC-DL-335418; 80063	1,2,3,4	ea		1	1			
5995-681-8447	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4763/U: (5 ft 4-1/2 in) SM-C-370898; 80063	1,2,3,4	ea		2	2			
5995-681-8453	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4764/U: (7 ft 8 in) SC-DL-365333; 80063	1,2,3,4	ea		2	2	2		
5995-681-8442	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4765/U: (7 ft 8 in); SC-DL-365330; 80063	1,2,3,4	ea		2	2	2		
5995-681-8441	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4766/U: (4 ft 8-1/4 in) SC-DL-364981; 80063	1,2,3,4	ea		1	1	2		
5995-681-8448	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4767/U: (4 ft 8-1/4 in) SC-DL-370284; 80063	1,2,3,4	ea		1	1	2		
5995-681-8437	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (10 in) SM-C-363749-4; 80063	1,2,3,4	ea		4	4	2		
5995-681-8428	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (1 ft 4 in); SM-C-363749-5; 80063	1,2,3,4	ea		16	16	2		
5995-681-8427	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (2 ft 4 in) SM-C-363749-1; 80063	1,2,3,4	ea		8	8	2		
5995-681-8429	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (4 ft) SM-C-363749-3; 80063	1,2,3,4	ea		2	2	2		
5995-681-8431	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (5 ft 6 in) SM-C-363749-11; 80063	1,2,3,4	ea		2	2	2		
5995-904-6106	CABLE ASSEMBLY, POWER ELECTRICAL CX-11215/G: (3 ft 1g)	1,2,3,4	ea		1	1			
5815-774-6380	CAN, CHAD: (F/TT-76/GG) SM-B-370609; 80063	1,2,3	ea		1	1	6		
7105-269-8463	CHAIR, FOLDING: SM-B-335417; 80063	1,2,3,4	ea		2	2			
5340-598-0383	CLAMP, LOOP: (U/on transmitter distributor for TT-76/GG) SM-B-364733; 80063	1,2,3,4	ea		4	4	16		

SECTION II. BASIC ISSUE ITEMS (CONTINUED)

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY FURN WITH EQUIP	(8) QTY AUTH	(9) ILLUSTRATIONS	
								(a) FIG. NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
P-O-R	6645-526-4395	CLOCK, AIRCRAFT, MECHANICAL: SM-B-472589-5; 80063 (Note: When replacing clock retain mtg bracket)	1,2,3,4	ea	1	1		6	
P-C	5805-673-3336	CONTROL, TELEGRAPH LINE C-2894/FG	1,2,3,4	ea	3	3		6	AT1, AT2, AT3
P-C	5995-688-5699	CORD ASSEMBLY, ELECTRICAL CX-4695/U: (6 ft) SC-DL-370292; 80063	1,2,3,4	ea	1	1		2	
P-C	5815-058-1667	COVER, ASSEMBLY: SM-C-370110-GR-II; 80063 (Replacement cover for transmitter distributor for TT-76()/GGC)	1,2,3,4	ea	2	2		16	
P-C	5815-053-3882	CUP, CHAD RECEPTACLE: SM-B-467330; 80063	1	ea	1	1		6	
P-C	7210-753-3043	CUSHION, CHAIR AND STOOL: SM-B-335428; 80063	1,2,3,4	ea	2	2			
P-C	6110-985-7574	DISTRIBUTION BOX J-1077A/U	1,2,3,4	ea	2	2		7	
P-C	4210-383-7128	EXTINGUISHER, FIRE, CARBON DIOXIDE: (2-1/2 lb cap) SM-B-364218; 80063	1,2,3,4	ea	1	1		7	
P-C	5120-293-2692	EXTRACTOR, ELECTRON TUBE: (Basket type; f/9 pin tube) 9113; 95344	1,2,3,4	ea	1	1		6	
P-C	5120-408-1481	EXTRACTOR, ELECTRON TUBE: (Basket type; f/7 pin tube) 7113; 95344	1,2,3,4	ea	1	1		6	
P-C	6545-922-1200	FIRST AID KIT, GENERAL PURPOSE: SC-C-539483; 80063	1,2,3,4	ea	1	1		7	
P-C	5120-776-9917	GRIP, CABLE, WOVEN: (U/w CX-4693A/U and CX-4694A/U, 16 in lg) SM-B-335430; 80063	1,2,3,4	ea	5	5		3	
P-C	5120-776-9918	GRIP, CABLE, WOVEN: (12 in lg; u/w cable WN-130G) SM-B-335429; 80063	1,2,3,4	ea	20	20		3	
P-C	5120-251-1489	HAMMER, HAND: (Double faced sledge; 8 lb) GG-H86, Type SA, Class 11; 81349	1,2,3,4	ea	1	1		8	
P-C	5975-682-0519	HANGER, CABLE: (U/to secure cables) SM-B-363104; 80063	1,2,3,4	ea	2	2		3	
P-C-R	4520-224-7909	HEATER, SPACE, ELECTRICAL: AAT-15A; 72143	2,3,4	ea	1	1		8	
P-C-R	4520-649-8145	HEATER, SPACE, ELECTRIC: HD-375/U	1	ea	1	1		8	
P-C	3895-766-8473	HOLDER, CABLE REEL: (Retains cable reel in transit) S-363238; 80063	1,2,3,4	ea	1	1		6	
P-C	5410-714-8488	HOLDER, CABLE REEL: (Retains cable reel in transit) SM-B-335772; 80063	1,2,3,4	ea	1	1		6	
P-C	2540-846-8483	LADDER, VEHICLE BOARDING MX-3543/G: SC-DL-147188; 80063	1,2,3,4	ea	1	1		10	
P-C	6240-538-8447	LAMP, FLUORESCENT: F20T12/CW; 24455	1,2,3,4	ea	4	2		4	DS9 thru DS
P-C	6240-223-9100	LAMP, GLOW: NE51; 81349	1,2,3,4	ea	9	2		4	DS15 thru DS23
P-C	6210-223-9104	LAMP, GLOW: NE40; 81349	1,2,3,4	ea	1	1		4	DS13
P-C	6240-270-4286	LAMP, GLOW: NE21; 81349	1,2,3,4	ea	7	1		4	DS2 thru DS
P-C	6240-143-3070	LAMP, INCANDESCENT: (50 w) 50A/RB; 24455	1,2,3,4	ea	1	1		4	
P-C	6240-55-7786	LAMP, INCANDESCENT: (F/lantern) FR2; 24455	1,2,3,4	ea	1	1		4	
P-C	6230-729-9614	LANIERN, ELECTRIC: (6 v) SM-B-335434; 80063	1,2,3,4	ea	1	1		9	
P-C	5410-752-2525	LEAD, ELECTRICAL: (F/ground connection) SM-B-3(52)66; 80063	1,2,3,4	ea	1	1		3	
P-O	6230-615-5384	LIGHT, EXTENSION: (25 ft) SM-B-370071; 80063	1,2,3,4	ea	1	1		3	
P-C	5120-596-4303	PIN STRAIGHTENER, ELECTRON TUBE: (F/7 and 9 pin miniature tubes) D-279-SN; 72600	1,2,3,4	ea	1	1			
P-C	5815-811-4404	PLATE, INSTRUCTION: (Inscribed "Caution-Modified per TM 11-5815-205-15") SM-B-365164; 80063	1,2,3,4	ea	4	4			
P-C	5815-831-4027	PLATE: (Identification for TA-182; mkd 1 to 6); SM-B-364658-1; 80063	1,2,3,4	set	1	1			
P-C	8130-656-1090	REEL, CABLE RC-435/U	1,2,3,4	ea	3	1		10	
P-C	5975-224-5260	ROD, GROUND MX-148/G: SC-DL-4158; 80063	1,2,3,4	ea	1	1		7	
P-C	6210-686-5568	SHIELD, LAMP: (Diffuser for fluorescent lamp; U shape) SM-B-335531; 80063	1,2,3,4	ea	4	4		15.1	
P-C	7520-162-6178	SHARPENER, PENCIL: GGG-S-236 Type II; 81349	1,2,3,4	ea	1	1		7	0333
P-C	5410-774-6108	SLING, MULTIPLE LEG: SC-C-36302; 80063	1,2,3,4	ea	1	1		19	

SECTION II. BASIC ISSUE ITEMS (CONTINUED)

(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY FURN WITH EQUIP	(8) QTY AUTH	(9) ILLUSTRATIONS	
	Reference Number & Mfr Code	USABLE ON CODE						(a) FIG. NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
6250-299-2884	STARTER, FLUORESCENT LAMP: FS-2; 64959	1,2,3,4	ea		4	3		4	
7510-272-6887	THUMBLOCKS: FF-T-311, Type 1, Class D; 81349	1,2,3,4	bx		1	1		3	
	NO ACCESSORIES, TOOLS, OR TEST EQUIPMENT ARE TO BE ISSUED WITH THIS EQUIPMENT								
	THE FOLLOWING ITEMS AND THEIR QUANTITIES ARE MOUNTED IN OR ON THE AN/MGC-17 FOR STORAGE PURPOSES								
5920-581-4144	FUSE, CARTRIDGE: 2		ea						
6240-143-3084	LAMP, INCANDESCENT: 1		ea						
	THE FOLLOWING ITEM AND ITS QUANTITY IS MOUNTED IN OR ON SHELTER, ELECTRICAL EQUIP. S-169/MGC-17, S-169A, B, C/MGC-17 FOR STORAGE PURPOSES								
6240-155-7786	LAMP, INCANDESCENT: 1		ea						

OSC-FM 2268-67

By Order of the Secretary of the Army:

HAROLD K. JOHNSON
General, United States Army
Chief of Staff.

Official:

KENNETH G. WICKHAM
Major General, United States Army,
The Adjutant General.

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LOGCOMD (2)
USAMICOM (4)
USASTRATCOM (4)
USAESC (70)
MDW (1)
Armies (2)
Corps (2)
USAC (3)
177th USASA Co (5)
183rd USASA Co (5)
184th USASA Co (5)
318th USASA Bn (5)
319th USASA Bn (5)
508th USASA Gp (5)
Svc Colleges (2)
USASCS (20)
USAADS (2)
USAAMS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USASESS (15)
USATC Armor (2)
USATCFLW (2)
USATC Inf (2)
USASTC (2)
WRAMC (1)
Army Pic Cen (2)
USACDCEC (10)
Instl (2) except
Fort Hancock (4)

NG: State AG (3)

USAR: None

For explanation of abbreviations used, see AR 320-50.

Fort Gordon (10)
Fort Huachuca (10)
Fort Carson (25)
Fort Knox (12)
WSMR (5)
Army Dep (2) except
LBAD (1)
SAAD (30)
TOAD (14)
LEAD (7)
SHAD (3)
NAAD (5)
SVAD (5)
CHAD (3)
ATAD (10)
Gen Deps (2)
Sig Sec Gen Deps (5)
Sig Dep (12)
Sig FLDMS (2)
AMS (1)
USAERDAA (2)
USAERDAW (13)
USACRREL (2)
MAAG (2)
USARMIS (2)
USASETAF (10)
Units org under fol TOE: (2 cys ea)
6-502 11-215
6-555 11-217
6-615 11-225
6-617 11-227
7 11-228
11-5 11-500 (AA-AC, G)
11-8 11-587
11-35 11-592
11-38 11-597
11-57 17
11-58 29-56
11-85 29-102
11-86 32-56
11-97 32-57
11-98 32-500
11-117 37
11-127 57
11-155 77-100
11-157 77-102
11-158 6-556

20 AUG 64

TM 11-5815-205-15

*C 7

**Operator's, Organizational,
Field, and Depot Maintenance**

TELETYPEWRITER CENTRAL OFFICE AN/MGC-17

CHANGE }
p. 7 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 30 June 1964

TM 11-5815-205-15, 2 November 1959, is changed as follows:

Note. The parenthetical reference to previous changes (example: "page 1 of C 6") indicates that pertinent material was published in that change.

Page 3, paragraph 2 (page 1 of C 6). Delete paragraph c and substitute:

c. *Reporting of Equipment Manual Improvements.* The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual, is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Publications)

will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to Commanding Officer, U. S. Army Electronics Material Support Agency, ATTN: SELMS-ML, Fort Monmouth, N. J. 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc.).

Page 62 (page 9 of C 6). Delete appendix I and substitute:

* This change supersedes C 4, 23 May 1962.

APPENDIX I

REFERENCES

The following applicable references are available for the operator and installer of Teletypewriter Central Office AN/MGC-17:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 4, 6, 7 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders
TB SIG 340	Cipher Machine TSEC/KW-9(U)
TB SIG 354	Maintenance and Repair Procedures for Lightweight Field and Mobile Shelters of Aluminum Stressed Skin Foam-Core Construction (Covering S-141/G and S-144/G Type Shelters)
TM 9-213	Painting Instruction for Field Use
TM 9-2330-202-14P	Operator, Organizational, and Field Maintenance Instructions, Repair Parts and Special Tool Lists for Trailer, Cargo: $\frac{3}{4}$ ton, 2-Wheel, M101 (2320-738-9509) and M101A1 (2330-898-6779); Chassis: Trailer: $\frac{3}{4}$ ton 2-Wheel M116 (2330-542-5987) and M116A1 (2330-898-6780)
TM 11-362	Reel Units RL-31, RL 31B, RL-31C RL-31D, and RL-31E
TM 11-900A	Power Unit PE-75-AF
TM 11-2155	Telephone Set TA-312/PT
TM 11-2225	Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter Reperforator-Transmitters TT-76/GGC, TT-76A/GGC, TT-76B/GGC, and TT-76C/GGC
TM 11-5805-204-15	Operator, Organizational, Field, and Depot Maintenance: Communication Patching Panel SB-611/MRC
TM 11-5805-246-10	Operator's Manual: Terminal, Telegraph TM-5/TG
TM 11-5805-246-20	Organizational Maintenance Manual: Terminal, Telegraph TH-5/TG
TM 11-5805-247-10	Operator's Manual: Converter, Telegraph-Telephone Signal TA-182/U
TM 11-5805-247-20	Organizational Maintenance Manual: Converter, Telegraph-Telephone Signal TA-182/U
TM 11-5805-257-12P	Operator and Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Generators, Ringing, Hand G-42/PT, and G-42A/PT
TM 11-5805-262-12	Operator's and Organizational Maintenance Manual: Switchboards, Telephone, Manual SB-22/PT and SB-22A/PT
TM 11-5815-205-25P	Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Central Office, Teletypewriter AN/MGC-17
TM 11-5815-206-12	Operator and Organizational Maintenance Manual: Teletypewriter Set AN/PGC-1 and Teletypewriters TT-4A/TG TT-4B/TG, TT-4C/TG, and TT-335/TG

M 11-5930-201-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Switch Box SA-331/U
M 11-5935-203-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Connectors, Receptacle, Electrical U-186A/U and U-186B/G
M 11-5935-205-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Connectors, Receptacle, Electrical U-187/G and U-187A/G
M 11-5965-206-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Headset-Microphone H-91-U, H-91A/U; Handset-Headset H-144/U, H-144A/U, H-144B/U, H-144C/U, and Headset-Microphone H-210/G
M 11-5965-207-12P	Operator's, Organizational Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Handset-Headsets H-81/U and H-81A/U
M 11-5965-224-15P	Operator, Organizational, Field, and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Handsets H-60/PT and H-165/U
M 11-6110-201-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists and Maintenance Allocation Chart: Distribution Boxes J-1077/U and J-1077A/U
M 11-6115-225-15P	Operator, Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Generator Set, Gasoline Engine, Trailer Mounted PU-322/G
M 38-750	Army Equipment Record Procedures
AM-10/TSEC	Repair and Maintenance Instructions for TSEC/KW-9
AO-33/TSEC	Operation of TSEC/KW-9
AO-8/TSEC	Pythom Operation

APPENDIX II

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and the subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelons.

(a) *Service.* To clean, to preserve, and to replenish lubricants.

(b) *Adjust.* To regulate periodically to prevent malfunction.

(c) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(d) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(e) *Replace.* To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(f) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running type spare items such as fuses, lamps, or electron tubes.

(g) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.

(h) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(i) *Overhaul.* To restore an item to completely serviceable condition as prescribed by serviceability standards. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(j) *Rebuild.* To restore an item to a standard as near as possible to original or new condition in ap-

pearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

1st, 2d, 3d, 4th, 5th echelons. The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

Tools required. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment requir-

ed to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.

c. Columns in the allocation of tools for maintenance functions are as follows:

- (1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.
- (2) *1st, 2d, 3d, 4th, 5th echelon.* The dagger (†) indicates the echelons normally allocated the facility.
- (3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by Signal services organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	Echelons					TOOLS REQUIRED	REMARKS
		1	2	3	4	5		
TELETYPEWRITER CENTRAL OFFICE AN/MGC-17	Service	X						Exterior and Interior.
	Inspect		X				1	Interior and Exterior.
	test		X					Continuity, shelter signal and power circuits except 2 pair cable assemblies. (Tool code 4 replace tool code 1 above 2nd echelon.)
	repair			X			4	All tests.
					X		2,3	Except door panel, gasket, skids, and molding strip replacement.
CONVERTER, TELEGRAPH-TELEPHONE TA-182/U	rebuild			X			2,3	Except skids and entrance door panel.
	overhaul				X		2,5	26 pair cable assemblies.
	repair					X	2,3,5	Shelter, electrical equipment, S-179/MGC-17.
							2,3,4	
	repair							See TM 11-5805-247-20 for Maintenance Allocations.
GENERATOR SET, GASOLINE ENGINE, TRAILER MOUNTED PU-322/G	repair							See TM 11-6115-225-15P for Maintenance Allocations.
	test	X					1	Continuity, shelter signal and power circuits, except 26. Pair cable assemblies. (Tool code 4 replaces tool code 1 above 2nd echelon.)
	repair		X				4	All test.
							2,3	Except door panel, gasket, skids, and molding strip replacement.
				X			2,3	Except replacement of skids and entrance door panel.
SHELTER, ELECTRICAL EQUIPMENT S-169/MGC-17	rebuild				X		2,5	26 pair cable assemblies.
	overhaul				X		2,3,5	
	test				X		4	
	repair				X		2,5	Replace cable and repair or replace connector.
CABLE ASSEMBLIES, 26 PAIR	test						4	
	repair						2,5	
CONNECTOR, PLUG, ELECTRICAL U-185/G	test				X		4	
	repair				X		2,5	
	repair						2,3	
CABLE ASSEMBLIES, POWER	test							
	repair							
CLOCK	test							
	repair							
CONNECTOR, RECEPTACLE, ELECTRICAL U-186A/G	test							
	repair							
DISTRIBUTION BOX J-1077A/U	test							
	repair							
EXTINGUISHER, FIRE	test							
	repair							

FUNCTION				See TM 11-5930-201-15P for Maintenance Allocations. See TM 11-362 for Maintenance Allocations. See TM 11-5805-262-12 for Maintenance Allocations. See TM 11-5965-207-12P for Maintenance Allocations. See TM 11-2155 for Maintenance Allocations. See TM 11-5805-257-12P for Maintenance Allocations. See TM 11-5965-224-15P for Maintenance Allocations. See TM 11-2225 for Maintenance Allocations. See TM 11-5815-206-12 for Maintenance Allocations. See TM 11-5805-246-20 for Maintenance Allocations.
AN/MGC-17 (continued) SWITCH BOX SA-331/U REEL UNIT RL-31 SWITCHBOARD, TELEPHONE, MANUAL SB-22/PT HANDSET-HEADSET H-81/U TELEPHONE SET TA-312/PT GENERATOR, RINGING, HAND G-42A/PT HANDSET H-60/PT TELETYPEWRITER SET AN/GGC-3; TELETYPEWRITER REPERFORATOR TRANSMITTER TT-76/GGC TELETYPEWRITER SET AN/PGC-1; TELETYPEWRITER TT-4/TG TERMINAL, TELEGRAPH TH-5/TG	repair repair repair repair repair repair repair repair repair repair repair			

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	ECHELON					TOOL CODE	REMARKS
	1	2	3	4	5		
MULTIMETER, AN/URM-105	+					1	
TOOL KIT, GENERAL MECHANICS	+	+	+	+		2	
SOLDERING IRON, TL-117	+	+	+	+		3	
MULTIMETER, TS-352/U			+	+		4	
SOLDERING IRON, TL-650/U				+	+	5	

APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

General

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as part of the major end item. The list includes all items authorized for basic operation or maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

b. Columns are as follows:

- (1) *Federal stock number.* This column lists the 11-digit Federal stock number.
- (2) *Designation by model.* The dagger (†) indicates model in which the part is used.
- (3) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.
- (4) *Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.
- (5) *Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.
- (6) *Quantity authorized.* Under "Items Comprising an Operable Equipment,"

the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

- (7) *Illustration.* The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

2. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization, in accordance with SB 11-6.

3. Cryptographic Equipment

Cryptographic equipment may be requisitioned through U. S. Army Signal Communication Security Agency, Arlington Hall, Va.

4. Cannibalization

This list covers U-185A/G and U-185B/G only; U-185/G is being maintained by cannibalization.

Section II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNITS OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
5815-683-5439		CENTRAL OFFICE, TELETYPEWRITER AN/MGC-17: An air-or vehicular-trans- portable voice-frequency (VF) telegraph switching center. Contains facilities for three teletypewriter circuits full duplex or half duplex. Communication Security equipment, (on-line or off-line)		NX			
		provided for use on one full duplex or two half-duplex teletypewriter circuits.					
		ITEMS COMPRISING AN OPERABLE EQUIPMENT					
ORD THRU AGC		TECHNICAL MANUAL TM-5815-205-15			2		
ORD THRU AGC		TECHNICAL MANUAL TM-11-5805-204-15			2		
5805-263-3326		CONVERTER, TELEGRAPH TELEPHONE SIGNAL TA-182/U: (less case)		NX	6	7	
		CRYPTOGRAPHIC EQUIPMENT SET: (See note 3)		NX	R		
6115-577-3370		GENERATOR SET, GASOLINE ENGINE, TRAILER MOUNTED PU322/G		NX	1	1	
3895-252-6896		REEL UNIT RL-31		NX	1		
5815-553-6061		REPERFORATOR, TRANSMITTER TELETYPEWRITER TT-76B/GGC		NX	1	6	
5815-553-6061		REPERFORATOR TRANSMITTER TELETYPEWRITER TT-76B/GGC: (less chad bin assy)		NX	1	6	
5410-647-0117		SHELTER, ELECTRICAL, EQUIPMENT S-169/MGC-17; S-169A, B, C/MGC-19 (S-144()/G shelter modified)		NX	1	1	
5805-257-3602		SWITCHBOARD, TELEPHONE, MANUAL SE-22/PT: (Less cover, handset 81/U and Operator Telephone Circuit TA-221/PT)			1	6	
5805-503-3337		TELEPHONE CIRCUIT, LINE JACK TA-222/PT		NX	2	6	
5805-543-0012		TELEPHONE SET TA-312/PT: (less case)		NX	1	7	
5815-198-4438		TELETYPEWRITER SET TT-4A/TG: (less carry case and immersion cover)		NX	1	6	
5805-246-8734		TERMINAL, TELEGRAPH TH-5/TG: (less cover)		NX	3	6	
		SHELTER, ELECTRICAL EQUIPMENT S-169/MGC-17; S-169A/MGC-17; S-169B/MGC- 17; S-169C/MGC-17					
		NOTE: Model Column 1 refers to S-169/MGC-17; Column 2 refers to S-169A/MGC-17; Column 3 refers to S-169B/MGC-17; Column 4 refers to S-169C/MGC-17					
5935-577-8804	† † †	ADAPTER, CONNECTOR, UG-1312/U			2	9	CPI CP2

AN/MGC-17 4

FEDERAL TOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
									FIGURE NO.	ITEM NO.
					AN/MGC-16 (continued)					
0-727-8111	+	+	+	+	AXE, SINGLE BIT: Fed Spec GGG-P-926B, type 1, CL1, design C			1	9	
0-753-4807	+	+	+	+	BASKET, WASTEPAPER: Fed Spec No. RR-B-181, Style A, Design C			1	8	
0-120-1020	+	+	+	+	BATTERY, DRY BA-30			4		BT-1 thru BT4
0-188-6951	+	+	+	+	BINDER, LOOSE LEAF: Fed Spec UU-B-346, type 1, Grade E			2		
0-070-4499				+	BLOWER ASSEMBLY: Sig dwg No. SM-D-468178			1		
0-178-8315	+	+	+	+	BRUSH, DUSTING: Fed Spec H-B-201 Class B			1	9	
0-973-0909	+	+	+	+	CABINET, SAFE: Herring-Hall-Marvin part No. SRF-55806 Sig dwg No. SM-B-370868			1		
5-823-2715	+	+	+	+	CABLE ASSEMBLY & REEL: c/o Cable Assembly CX-4566A/G (250 ft) wound on reel RC-435/U			2	10	
5-889-1229	+	+	+	+	CABLE ASSEMBLY, POWER, ELECTRICAL, CX-4693A/U: (25 ft) Sig dwg SM-DL-335423			2	10	W24, W25
5-889-1228	+	+	+	+	CABLE ASSEMBLY, POWER, ELECTRICAL CX-4694A/U: (100 ft) Sig dwg SC-DL-335418			1	10	W26
5-681-8447	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4763/U (5 ft 4-1/2 in.) Sig dwg SM-C-370858			2		W27, W28
5-681-8453	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4764/U: (7 ft 8 in.) Sig dwg SC-DL-365333			2	2	W37, W38
5-681-8442	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4765/U: (7 ft 8 in.) Sig dwg SC-DL-365330			2	2	W35, W36
5-681-8441	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4766/U: (4 ft 8-1/4 in.) Sig SC-DL-364981			1	2	W50
5-681-8448	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4767/U: (4 ft 8-1/4 in.) Sig dwg SC-DL-370284			1		
5-681-8437	+	+	+	+	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (10 in.) Sig SM-C-363749-4			4	2	W4 thru W7
5-681-8428	+	+	+	+	CABLE ASSEMBLY, ELECTRICAL CX-4768/U: (1 ft 4 in.) Sig dwg SM-C-363749-5			16	2	W8 thru W23
5-681-8427	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4768/U: (2 ft 4 in.) Sig SM-C-363749-1			8	2	W42 thru W49
5-681-8429	+	+	+	+	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4768/U: (4 ft) Sig dwg SM-C-363749-3			2	2	W2, W3

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
									FIGURE NO.	ITEM NO.
					AN/MGC-17 (continued)					
5995-681-8431	†	†	†	†	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-4768/U: (5 ft 6 in.) Sig dwg SM-C-363749-11			2	2	W39, W40
5815-774-6380	†	†	†	†	CAN, CHAD: Plastics Container part No. 366 Sig dwg SM-B-370609			1	6	
7105-269-8463	†	†	†	†	CHAIR, FOLDING: Lyon Steel Equip type 1506: Sig dwg SM-B-335417			2		
5340-598-0383	†	†	†	†	CLAMP LOOP: U/on transmitter for TT-76 () GGC; Burndy part No. HP-4N Sig dwg SM-B-364733			4		
6645-526-4395	†	†	†	†	CLOCK, AIRCRAFT, MECHANICAL: (NOTE: When replacing clock retain mtg bracket)		NX	1		
5805-673-3336	†	†	†	†	CONTROL, TELEGRAPH LINE C-2894/RQ			3	6	AT1, AT2, AT3
5995-688-5699	†	†	†	†	CORD ASSEMBLY, ELECTRICAL CX-4695/U: (5 ft 10 in.) Sig dwg SC-DL-370292			1	2	
5815-058-1667	†	†	†	†	COVER: replacement cover for transmitter distributor for TT-76 () GGC: Sig dwg SM-C-370110 GR11			2		
5815-053-3882				†	CUP, CHAFF RECEPTACLE: Sig dwg No. SM-B-467330			1		
7210-753-3043	†	†	†	†	CUSHION, CHAIR AND STOOL: Dunlap Tire No. 304-17 Sig dwg SM-B-335428			2		
6110-985-7574	†	†	†	†	DISTRIBUTION BOX J-1077A/U			2	7	
4210-383-7128	†	†	†	†	EXTINGUISHER, FIRE, CARBON DIOXIDE: 2-1/2 lb cap; Kidde Model 2-1/2 T1 Sig dwg SM-B-364218			1	7	
5120-408-1481	†	†	†	†	EXTRACTOR, ELECTRON TUBE: basket type; f/7 pin tube; Economy Cable Grip Co. type No. 7113			1		
5120-293-2692	†	†	†	†	EXTRACTOR, ELECTRON TUBE: basket type; f/9 pin tube; Economy Cable Grip Co. type No. 9113			1		
4130-542-3405	†	†	†	†	FILTER, AIR CONDITIONING: door; Metal Wood Div part No. A2, P/O shelter			2	5	
5410-969-9068				†	FILTER, AIR CONDITIONING: door; Highway Trailer Co. part No. SS-144-432			1		
6545-922-1200	†	†	†	†	FIRST AID KIT, GENERAL PURPOSE			1		
5120-776-9918	†	†	†	†	GRIP, CABLE, WOVEN: 12 in. lg; Economy Cable Grip part No. 26S; Sig dwg SM-B-335429			20	3	
5120-776-9917	†	†	†	†	GRIP, CABLE, WOVEN: Economy Cable Grip part No. 6-8P; Sig dwg SM-B-335430			5	3	

AN/MGC-17

FEDERAL OCK NUMBER	DESIGNATION BY MODEL				DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
									FIGURE NO.	ITEM NO.
					AN/MGC-17 (continued)					
-251-4489	†	†	†	†	HAMMER, HANK: double faced sledge; 8 lb hd wt; Fed Spec GG-H-86 type SA Class 11			1		
-682-0519	†	†	†	†	HANGER, CABLE: U/to secure cables; Sig dwg SM-B-363104			2	3	
-649-8145	†				HEATER, SPACE, ELECTRIC HD-375/U		NX	1	8	
-224-7909	†	†	†		HEATER, SPACE, ELECTRICAL: Electromode part No. AAT-15A		NX	1	8	
-766-8473	†	†	†	†	HOLDER, CABLE REEL: retains cable reel in transit; 9-5/8 in. lg X 2-1/2 in. w; Sig dwg No. SM-B-363238			1		
-714-8488	†	†	†	†	HOLDER, CABLE REEL: retains cable reel in transit; 18 in. lg X 1/2 in. dia; Sig dwg No. SM-B-335772			1		
-846-8483	†	†	†	†	LADDER, VEHICLE BOARDING MX-354w/G: Sig dwg SC-DL-147188			1	10	
-729-9614	†	†	†	†	LANTERN, ELECTRIC: Justrite Model No. 2106-7; Sig dwg SM-B-335434			1	9	
-752-2525	†	†	†	†	LEAD, ELECTRICAL: f/ground connection; Sig dwg SM-B-3(52)66			1	3	W51
-615-5384	†	†	†	†	LIGHT, EXTENSION: 25 ft Daniel Woodhead part No. 506KS25-18-2SJ			1	3	
-715-7774	†	†	†	†	PADLOCK: Hurd Lock No. 325A1B			1		
-596-4303	†	†	†	†	PIN STRAIGHTENER, ELECTRON TUBE: f/7 and 9 pin miniature tubes; Duro Specialty Co. part No. D-279-SN			1		
-831-4027	†	†	†	†	PLATE: identification for TA-182; mkd 1 to 6; Sig dwg SM-B-364658-1	set		1		
-811-4404	†	†	†	†	PLATE, INSTRUCTION: inscribed "Caution-Modified per TM11-5815-205-15" Sig dwg SM-B-365164			4		
-656-1090	†	†	†	†	REEL, CABLE RC-435/U			1	10	
-224-5260	†	†	†	†	ROD, GROUND MX-148/G			1	7	
-686-5568	†	†	†	†	SHIELD, LAMP: diffuser for fluorescent lamp; U shape; Sig dwg No. SM-B-335531			4		
-162-6178	†	†	†	†	SHARPENER, PENCIL: Fed Spec GG-S-236 type II			1	7	0333
-774-6108	†	†	†	†	SLING, MULTIPLE LEG: Sig dwg SC-C-36302			1		

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

icial:

. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

tribution:

Active Army:

USASA (2)
CNGB (1)
CofT (1)
CofEngrs (1)
TSG (1)
CofSptS (1)
C/COMMEL (7)
USAARMBD (2)
USAARTYBD (2)
USCONARC (5)
USAMC (5)
USAECOM (7)
USAMICOM (4)
USASMCOM (2)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
MDW (1)
Armies (2)
Corps (2)
USA Corps (3)
507th USASA Gp (5)
508th USASA Gp (5)
319th USASA Bn (5)
320th USASA Bn (5)
321st USASA Bn (5)
Instl (2) except
 Fort Monmouth (63)
 Fort Hancock (4)
 Fort Gordon (5)
 Ft Huachuca (10)
Svc Colleges (2)
Br Svc Sch (2)
GENDEP (OS) (2)
Sig Sec, GENDEP (OS) (5)
Sig Dep (OS) (12)
Army Dep (2) except
 Lexington (12)
 Sacramento (28)
 Tobyhanna (12)
 Ft Worth (8)
 Letterkenny (5)
 Sharpe (3)
 Savanna (5)
 Navajo (5)
 Charleston (3)

USASCC (4)
USAECDA (1)
USACBRCDA (1)
USACECDA (1)
USACECDA (Monmouth Ofc) (1)
USAMSCDA (1)
USAOCD (1)
USAQMCDA (1)
USATCDA (1)
USAADCDA (1)
USAARMCDA (2)
USAAVNCDA (1)
USAARTYCDA (2)
USASWCDA (1)
USA Elct Mat Agcy (9)
USASA 1st Fld Sta (5)
USARSOUTHCOM Sig Agcy (1)
USATC AD (2)
USATC Armor (3)
USATC Engr (2)
USATC Inf (3)
WRAMC (1)
Army Pic Cen (2)
USAERDL (2)
USA Cold Rgn RE Lab (2)
Chicago Proc Dist (1)
11th Air Assault Div (3)
AMS (1)
USATTTCARC (1)
USATTCA (1)
USATTTCG (1)
USATTTCP (1)
USAELRDA (White Sands) (13)
Army Tml (1) except Oakland (5)
POE (1)
Sig Fld Maint Shops (3)
WSMR (5)
Units org under fol TOE: (2 copies
 each except as indicated)
 6-501
 6-615
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11-97
11-98
11-117

11-155
11-157
11-500 (AA-AE) (4)
11-557
11-587
11-592
11-597
17
32-56
32-57
32-500
37

NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1964-750789/6

TECHNICAL MANUAL

Operator's, Organizational, Field, and Depot Maintenance Manual,

TELETYPEWRITER CENTRAL OFFICE AN/MGC-17

5815-205-15

S No. 6

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 15 May 1963

11-5815-205-15, 2 November 1959, is changed as indicated so that the manual also applies to the equipment:

Nomenclature	Order No.
Electrical Equipment C/MGC-17	19023-Phila-62

The parenthetical reference to previous changes page 15 of C 3) indicates that pertinent material changed in that changes.

3, chapter 1. Add the following note below of chapter 1:

Shelter, Electrical Equipment S-169C/MGC-17 is to Shelters, Electrical Equipment S-169/MGC-17, MGC-17 and S-169B/MGC-17. Information in manual applies to all shelters unless otherwise specified.

Add the following after paragraph 1:

Index of Publications

to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, additional publications pertaining to your unit. DA Pam 310-4 is an index of current manuals, technical bulletins, supply orders, lubrication orders, and modification work which are available through publications channels. The index lists the individual (10, -20, -35P, etc.) and the latest changes to editions of each equipment publication.

Paragraph 2 (page 1 of C 4). Delete paragraph and substitute:

Forms and Records

Reports of Maintenance and Unsatisfactory Equipment. Use Equipment forms and records in accordance with instructions in TM 38-750.

Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58, NAVSANDA Publications 378 (Navy), AFM 71-4 (Air Force).

c. Comments on Manual. Forward all comments on this publication direct to—Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. (DA Form 1598 (Record of Comments on Publications), DA Form 2496 (Disposition Form), or letter may be used.)

Paragraph 2.1 (page 1 of C 4). Delete paragraph 2.1.

Page 9, paragraph 8. Make the following changes:

Subparagraph a, line 14. Delete "The TH-5/TG switches and indicating lamps are mounted in the ac power duct."

Subparagraph b. Add the following note after subparagraph b:

Note. In the S-169C/MGC-17 shelter, the two dropline boxes are secured with the ladder instead of to the right wall of the shelter during transit.

Subparagraph c. Add the following after the last sentence: The TH-5/TG switches and indicating lamps are mounted in the ac power duct.

Page 10, paragraph 8e. After the last sentence, add: In the S-169C/MGC-17 shelter, the two dropline boxes are attached to the ladder by webbed straps.

Page 16, paragraph 12. Delete paragraph 12 and substitute:

12. Distribution Boxes J-1077/U and J-1077A/U (fig. 7)

When not in use, two dropline boxes in the S-169/MGC-17, S-169A/MGC-17, and S-169B/MGC-17 shelters are mounted on the right wall of the shelter above the TA-182/U's. In the S-169C/MGC-17, two dropline boxes are secured with the ladder during transit. The dropline boxes are used

for testing, as wireheads, and to drop extension circuits from a 26-pair cable. A complete description is included in TM 11-5805-204-15.

Page 19, figure 13. Add the following note to the figure:

NOTE:

ON SOME EQUIPMENTS, "LIGHTS" AND "OPR POS" CIRCUIT BREAKERS ARE MOUNTED ONE ABOVE THE OTHER; SIMILARLY MOUNTED ARE "CONVENIENCE RECEPTACLE" AND "HEATER" CIRCUIT BREAKERS. "BLOWER 1" AND "BLOWER 2" ARE UNCHANGED.

Page 21. Make the following changes:

Paragraph 20g, last line. Change "CX-A876/U" to: CX-4876/U.

Paragraph 21. Make the following changes:

Subparagraph a, heading. Change "(TM 11-2202)" to: (TM 11-5805-262-12).

Subparagraph d, heading. Change "(TM 11-2239)" to: (TM 11-5805-246-10).

Subparagraph e, heading. Change "(TM 11-2137)" to: (TM 11-5805-247-10).

Page 22, paragraph 23a(1). Add subparagraph (1.1) after subparagraph (1):

(1.1) In the S-169C/MGC-17, unfasten the two web straps which secure each of the dropline boxes to the ladder and remove the dropline boxes from the shelter.

Page 23, paragraph 24a(4). Make the following changes:

Designate the existing chart as follows:

(a) S-169/MGC-17, S-169A/MGC-17, and S-169B/MGC-17.

Add subparagraph (b) after subparagraph (a):

(b) S-169C/MGC-17.

Binding post pair No.	SB-22/PT cable			
	Upper binding post		Lower binding post	
	Wire No.	Color	Wire No.	Color
1	1	White	1	Blue
2	2	White	2	Orange
3	3	White	3	Green
4	4	White	4	Brown
5	5	White	5	Gray (slate)
6	6	Red	6	Blue
7	7	Red	7	Orange
8	8	Red	8	Green
9	9	Red	9	Brown
10	10	Red	10	Gray (slate)
11	11	Black	11	Blue
12	12	Black	12	Orange
17	13	Brown	13	Black
NA	NA	Violet		
GND			17	Black

Page 29, paragraph 29a(1), line 2. Change "(TM 11-2137)" to: (TM 11-5805-247-10).

Paragraph 29b(1). Make the following changes: Designate the existing chart as follows:

(a) S-169/MGC-17, S-169A/MGC-17, S-169B/MGC-17.

Add subparagraph (b) after subparagraph (a):

(b) S-169C/MGC-17.

Cable	Wire lead	Color	Connect to TA-182/U No.	TA-182/U binding posts
TA-182/U 1	1	White	1	LINE 1 4WS 2W
	2	Blue	1	LINE 2 4WS 2W
	5	White	1	LOOP 5 4WR 2W
	6	Orange	1	LOOP 6 4WR 2W
TA-182/U 2	1	White	2	LINE 1 4WS 2W
	2	Green	2	LINE 2 4WS 2W
	5	White	2	LOOP 5 4WR 2W
	6	Brown	2	LOOP 6 4WR 2W
TA-182/U 3	1	White	3	LINE 1 4WS 2W
	2	Gray (slate)	3	LINE 2 4WS 2W
	5	Red	3	LOOP 5 4WR 2W
	6	Blue	3	LOOP 6 4WR 2W
TA-182/U 4	1	Red	4	LINE 1 4WS 2W
	2	Orange	4	LINE 2 4WS 2W
	5	Red	4	LOOP 5 4WR 2W
	6	Green	4	LOOP 6 4WR 2W
TA-182/U 5	1	Black	5	LINE 1 4WS 2W
	2	Blue	5	LINE 2 4WS 2W
	5	Black	5	LOOP 5 4WR 2W
	6	Blue	5	LOOP 6 4WR 2W
TA-182/U 6	1	Black	6	LINE 1 4WS 2W
	2	Orange	6	LINE 2 4WS 2W
	5	Black	6	LOOP 5 4WR 2W
	6	Orange	6	LOOP 6 4WR 2W

Page 41, paragraph 48. Make the following changes:

Subparagraph c, line 2. Change "(TM 11-2239)" to: (TM 11-5805-246-10).

Subparagraph f, line 2. Change "(TM 11-2137)" to: (TM 11-5805-247-10).

Paragraph 48b, line 2. Change "left" to: front.

Page 49. Delete paragraphs 54 through (page 14 of C 3) and substitute:

54. Scope of Maintenance and Procedures

a. General.

(1) Operator maintenance consists of the echelon preventive maintenance. Prev

tive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to maintain the equipment in combat-serviceable condition. Operator preventive maintenance is performed daily; specific procedures are provided in paragraph 55.

Organizational maintenance consists of second echelon preventive maintenance, troubleshooting (pars. 57.1-58), and replacement of authorized repair parts (TM 11-5815-205-25P). Second echelon preventive maintenance is performed on a monthly and quarterly basis; specific procedures are provided in paragraphs 56 and 57.

The preventive maintenance checks and services provided in paragraphs 55, 56, and 57 outline inspections to be made at specific intervals. They are designed to help maintain equipment in combat-serviceable condition. They indicate what items should be checked and how they should be checked. Also included are procedures for authorized repairs and references to text, illustrations, and other manuals that contain supplementary information.

Defects that cannot be corrected must be reported to higher echelon maintenance

personnel. Records and reports of repair and preventive maintenance must be made in accordance with procedures given in TM 38-750.

b. Cleaning.

Warning: Prolonged breathing of fumes from cleaning compound is dangerous. Be sure adequate ventilation is provided; do not use near a flame.

- (1) Use a dry, clean, lint-free cloth or brush to remove dust and dirt. If necessary, moisten the cloth or brush with Cleaning Compound (Federal stock No. 7930-395-9542). After cleaning, wipe dry with a cloth.

Warning: Compressed air is dangerous and can cause serious bodily harm. It can also cause mechanical damage to the equipment. Do not use compressed air to dry parts where cleaning compound has been used.

- (2) Dry compressed air, not to exceed 60 pounds per square inch, may be used to remove dirt and dust from inaccessible places.

c. Touchup Painting. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of the proper paint on bare metal to protect it from further corrosion. Refer to applicable cleaning and refinishing practices specified in TM 9-2851.

ily Preventive Maintenance Checks and Services

Item	Procedures	Reference
	EXTERIOR	
shelter skin.	Check for skin punctures, cracks, or open seams that could permit moisture to enter shelter wall.	Fig. 18.
grounding system.	a. Check grounding system to see that it is properly installed. b. Tighten loose ground lead connections.	a. Par. 41. b. None.
sliding assembly.	Tighten turnbuckles to remove slack in sling assembly.	Fig. 19; par. 39.
power and signal entrance boxes, drop-line box, and junction box.	a. Clean area around binding posts and receptacles. b. Put covers on unused receptacles to keep out moisture, dirt, and sand, and to protect contacts.	a. Par. 54b; figs. 5, 7, 9, and 11. b. Par. 45; fig. 19.1.
power and signal cable assemblies.	a. Clean cable insulation and connectors. b. Tighten loose connections. c. Adjust cable grips so that they effectively relieve strain of cable weight. d. Put covers on unused cable connectors to keep out moisture, dirt, and sand, and to protect contacts.	a. Par. 54b. b. None. c. Fig. 3. d. None.

Sequence No.	Item	Procedures	Reference
6	Trailer (part of PU-322/G).	a. Clean trailer floor and around generator sets. b. Perform required lubrication and preventive maintenance.	a. Par. 54b; fig. 1. b. TM 9-847A.
7	Generator sets (part of PU-233/G).	a. Clean generator sets. b. Tighten loose connections of power cables, grounding leads and, if used, auxiliary fuel lines. c. Perform required lubrication and preventive maintenance.	a. Par. 54b. b. None. c. TM 11-900A.
8	Switchbox.	a. Clean the case and web strap. b. Tighten loose connections of power cables and ground lead. c. Put covers on unused cable receptacles to keep out moisture, dirt, sand, and to protect contacts.	a. Fig. 6; par. 54b. b. None. c. None.
		<i>INTERIOR</i>	
9	Signal and power cables, cords, wires, and patching cords.	a. Tighten loose connections of plugs and connectors. b. Check to see that insulation is not cut. Remove kinks and strain.	a. Par. 20. b. None.
10	Lighting system.	Replace defective lamps and fluorescent lamp starters; use spares.	Fig. 4.
11	Walls, ceiling, and floor.	Check for holes, open seams, or signs of leaks or water seepage.	Figs. 15.1 and 15.2.
12	Wastepaper receptacles.	Empty and clean receptacles.	Par. 54b.
13	Cabinets.	Remove articles that are not authorized.	Par. 8.
14	Batteries and flashlight.	Replace batteries or lamp if flashlight fails to light.	Fig. 9; app. III.
15	Dropline box (if stored in shelter).	Perform procedures given in <i>sequence No. 4</i> above.	Fig. 7.
16	Switchbox (if stored inside shelter).	Perform procedures given in <i>sequence No. 8</i> above.	Fig. 6.
17	Clock.	Wind and set to correct time, if necessary.	Fig. 6.
18	Power distribution panel.	Check to see that voltmeter indicates approximately 115 volts ac; that ammeter indication is normal for amount of lighting and equipment in use; replace neon lamps that fail to light when associated switch is operated (use spare).	Fig. 13.
19	Communication equipment: a. SB-12/PT. b. Communication security equipment. c. TT-4A/TG. d. TT-76(*)/GGC. e. TH-5/TG. f. TA-182/U.	a. Perform the required daily preventive maintenance checks and services. b. Perform the required daily preventive maintenance checks and services. c. Perform the required daily preventive maintenance checks and services. d. Perform the required daily preventive maintenance checks and services. e. Perform the required daily preventive maintenance checks and services. f. Perform the required daily preventive maintenance checks and services.	a. TM 11-5805-262-12. b. KAM-10/TSEC, KAO-33/TSEC, and TB SIG 340. c. TM 11-5815-206-12. d. TM 11-2225. e. TM 11-5805-246-10. f. TM 11-5805-247-10.

Item	Procedures	Reference
<i>g.</i> TA-312/PT.	<i>g.</i> Perform the required daily preventive maintenance checks and services.	<i>g.</i> TM 11-2155.
<i>h.</i> Patching panel.	<i>h.</i> Check to see that: (1) Circuits are patched as required. (2) Patching cord plugs are fully inserted into jacks.	<i>h.</i> Figs. 6 and 14. (1) Pars. 49 and 50. (2) None.
Equipment operation.	<i>a.</i> Check to see that all equipment performs satisfactorily, especially communication equipment. <i>b.</i> Report operational failure of any equipment or circuit. <i>c.</i> Replace defective item for which authorized spare parts are provided.	<i>a.</i> Pars. 43 and 48 through 53. <i>b.</i> TM 38-750. <i>c.</i> App. III (for shelter equipment); app. I (for organizational equipment manuals).

Monthly Preventive Maintenance Checks and Services

Item	Procedures	Reference
<i>EXTERIOR</i>		
Shelter skin and hardware.	Paint blistered, pitted, and flaking areas and bare metal spots (such as steps, signal entrance box covers, skids, towing eyes, etc.	Fig. 18, par. 54c.
Grounding system.	Clean ground lug connections.	Par. 54b and c.
Sling assembly.	Clean parts and paint bare metal spots.	Fig. 19; par. 54b and c.
Shelter door.	<i>a.</i> Clean; paint bare metal spots. <i>b.</i> Tighten loose screws and bolts. <i>c.</i> Lubricate door locks and latches with Grease, Graphite; Aircraft (GGA); lubricate hinges with Lubricating Oil, General Purpose; Preservative (PL-SPECIAL) or Lubricating Oil, Internal Combustion Engine (OE-10). <i>d.</i> Clean air filter. <i>e.</i> Put gasket adhesive on loose gaskets.	<i>a.</i> Par. 54b and c. <i>b.</i> None. <i>c.</i> None. <i>d.</i> Fig. 5. <i>e.</i> None.
Power and signal entrance boxes, drop-line box, and junction box.	<i>a.</i> Remove corrosion from metal of wires connected to binding posts. <i>b.</i> Lubricate piano-type hinges of covers; use oil (PL-SPECIAL or OE-10). <i>c.</i> Paint bare metal spots.	<i>a.</i> Figs. 5, 7, 9, and 11. <i>b.</i> None. <i>c.</i> Par. 54c.
Power and signal cables assemblies.	<i>a.</i> Repair insulation, cuts, and abrasions with electrical insulation tape. <i>b.</i> Inspect cable layout and relocate cables as necessary so that they are not endangered by, and are not dangerous to, vehicles and personnel.	<i>a.</i> Fig. 10. <i>b.</i> None.
Trailer (part of PU-322/G).	<i>a.</i> Tighten mounting bolts that hold generator sets, bracket assemblies of gasoline cans, and ground rod. <i>b.</i> Perform required lubrication and preventive maintenance.	<i>a.</i> Fig. 1. <i>b.</i> TM 9-874A.
Generator sets (part of PU-322/G).	Perform required lubrication and preventive maintenance.	Fig. 1; TM 11-900A.

Se- quence No.	Item	Procedures	Reference
9	Switchbox.	a. Tighten screws around case; tighten locknuts that hold cable receptacles. b. Paint bare metal spots.	a. Fig. 6. b. Par. 54c.
10	Signal and power cables, cords, wires, and patching cords.	<i>INTERIOR</i> a. Tighten screws and clamps that hold wires to terminals. b. Repair insulation, cuts, and abrasions with electrical insulation tape. c. Cover unconnected bare wires with electrical insulation tape to prevent damage to equipment and personnel. d. Polish metal plugs (such as those on patching cords, telephone cords, etc.) with Metal Paste Polish (Federal Stock No: 3930-269-5270).	
11	Signal, power, and lighting system ducts.	a. Tighten loose screws, bolts, and clips. b. Repair or replace defective switches, switch plates, outlets, receptacles, and jacks.	
12	Lighting system.	a. Tighten loose screws and nuts that hold lighting fixtures, lights, and parts of power distribution panel. b. Repair or replace defective parts in lighting system and on power distribution panel.	
13	Walls, ceiling, and floor.	a. Clean all parts. b. Check for skin punctures and cracked seams.	a. Par. 54b and c. b. None.
14	Cabinets.	Repair or replace broken doors and latches.	
15	Equipment mountings.	a. Tighten loose bolts, nuts, and screws that hold equipment, racks, frames, shelves, braces, clamps, and mounting hardware. Replace missing bolts, nuts, and screws. b. Check to see that equipment mountings such as racks, frames, shelves, braces, and clamps are not so bent, broken, or so out of shape as to endanger equipment or personnel.	
16	Patching panels.	Repair or replace defective jacks.	Fig. 14.
17	Batteries, flashlight, and battery boxes.	a. Replace batteries that show signs of swelling, leaking, or corrosion. b. Clean battery compartments.	a. Figs. 6 and 9. b. Par. 54b.
18	Exhaust blowers.	a. Lubricate at oil points with oil (PL-SPECIAL or OE-10). b. Clean motor and fan housing.	a. Fig. 8. b. Par. 54b.
19	Blackout curtains.	a. Tighten screws that hold fixture to ceiling. b. Repair or replace curtains if torn, ripped, or frayed.	a. Fig. 9. b. None.
20	Electric heater.	a. Clean inside and outside of case. b. Repair or replace defective parts.	a. Par. 54b. b. None.
21	Dropline box (if stored in shelter).	Perform procedures given in <i>sequence No. 5</i> above.	Fig. 7.
22	Switchbox (if stored in shelter).	Perform procedures given in <i>sequence No. 9</i> above.	Fig. 6.
23	Clock.	Replace if correct time cannot be maintained.	Fig. 6.

Item	Procedures	Reference
Communication Equipment: a. SB-22/PT----- b. Communication security equipment. c. TT-4A/TG. d. TT-76(*)/GGC. e. TH-5/TG. f. TA-182/U. g. TA-312/PT.	a. Perform preventive maintenance checks and services. b. Perform preventive maintenance checks and services. c. Perform preventive maintenance checks and services. d. Perform preventive maintenance checks and services. e. Perform preventive maintenance checks and services. f. Perform preventive maintenance checks and services. g. Perform preventive maintenance checks and services.	a. TM 11-5805-262-12. b. KAM-10/TSEC, KAO-33/TSEC, and TB SIG 340. c. TM 11-5815-206-12. d. TM 11-2225. e. TM 11-5805-246-20. f. TM 11-5805-247-20. g. TM 11-2155.
Equipment performance.	a. Check out the operation of all equipment. b. Replace and/or repair any defective or inoperable part.	a. Par. 58. b. None.

Quarterly Preventive Maintenance Checks and Services

Item	Procedures	Reference
Components: a. Inventory. b. Location of parts. c. Publications.	<p style="text-align: center;"><i>GENERAL</i></p> a. Inventory equipment; requisition missing and defective parts. b. Check to see that all components are mounted or stowed in assigned places, except those that are being used (such as power cables, switchbox, dropline box, etc.). c. Requisition all operator and organizational maintenance manuals and all parts manuals covering AN/MGC-17 and its components, that are not on hand or in usable condition (including all current Changes publications).	a. App. III. b. Figs. 6 through 10, 15.1, and 15.2; par. 8. c. DA Pam 310-4.
Modification work orders.	Check to see whether any MWO's are required for AN/MGC-17 or its components. Check equipment to see if applicable MWO's have been applied and MWO number is stamped as required. Perform modification, or request modification as applicable.	See applicable MWO (DA Pam 310-4) and TM 38-750.
Shelter skin and hardware.	<p style="text-align: center;"><i>EXTERIOR</i></p> a. Check for skin punctures, cracks, or open seams that would permit moisture to enter shelter wall. b. Repair or replace defective hardware.	
Grounding system.	Replace ground rod if ground lead cannot be securely tightened, Replace ground lead if it is cut, corroded, or broken.	
Shelter door.	Replace defective or missing rubber gaskets or those that do not provide watertight seal. Replace broken door hinges and latches.	
Power and signal entrance boxes, dropline box, and junction box.	a. Carefully remove sand, dirt, and moisture from among contacts of 26-pair cable receptacles. b. Tighten locknuts, screws, and bolts that hold receptacles and binding posts. c. Replace all defective parts (such as binding posts, rubber caps on binding posts, cable receptacles, etc.).	a. Figs. 5, 7, 9, and 11. b. None. c. None.

Sequence No.	Item	Procedures	Reference
7	Power and signal cable assemblies.	Replace cable assemblies in which wiring, insulation, or connectors are defective.	Fig. 10.
8	Trailer (part of PU-322/G).	Perform required preventive maintenance checks and services.	TM 9-874A.
9	Generator sets (part of PU-322/G).	Perform required preventive maintenance checks and services.	TM 11-900A.
		<i>INTERIOR</i>	
10	Signal and power cables, cords, patching cords.	a. Dress all cables, wires, and cords neatly; use cable and cord clamps provided in shelter or use electrical insulation tape and twine. b. Repair or replace defective cables, cords, wires, and patching cords.	a. None. b. Par. 58.1.
11	Walls, ceiling, and floor.	Paint blistered, pitted, or flaking areas, and bare metal spots.	Par. 54c.
12	Fire extinguisher.	a. Refill if weight of contents is less than 2½ pounds or if seal is broken. b. Replace if valve assembly is damaged.	a. Appropriate personnel. b. App. III.
13	First aid kit.	Replace if case is broken or damaged. Replace parts that have been used (see parts list inside front cover).	Fig. 7.
14	Dropline box (if stored inside shelter).	Perform procedures given in <i>sequence No. 6</i> above.	Fig. 7.
15	Reel Unit RL-31.	a. Check to see that reel rotates freely. Repair or replace parts that are bent or broken. b. Paint blistered, pitted, or flaking areas and bare metal spots.	a. TM 11-3895-202-20P. b. Par. 54c.
16	Chair and chair cushion.	a. Repair or replace chair if parts are bent or broken or if chair is unsafe for use. b. Repair or replace cushion that is torn, cut, has split seams or exposed padding.	
17	Axe and sledge hammer.	Replace if handle is broken, split, or does not fit head tightly.	Figs. 8 and 9.
18	Ladder.	a. Paint blistered, pitted, or flaking areas, and bare metal spots. b. Repair or replace if steps, frame, or parts are bent, broken, or if it is unsafe for use.	a. Par. 54c. b. None.

Page 54, paragraph 59b (page 15 of C 3). Add the following note after subparagraph b:

Note. In the S-169C/MGC-17 shelter, the replacement color code listed in the charts (1) and (2) below will be used as the original cable color code.

Facing page 56, figure 27 (fold-out) (page 15 of C 3).

Make the following changes in the notes:

Note 1. Change "18 GAGE" to: 16 GAGE.

Note 3. Change "14 GAGE" to: 12 GAGE.

Add note 5 after note 4:

5. ALL WIRING FROM THE CIRCUIT BREAKER TO TA-182/U AND TH-5/TG SWITCHES, LAMPS AND RECEPTACLES IS 16 GAGE.

Page 61, paragraph 64v. Add subparagraph v.1 after subparagraph v:

v.1. Place the two dropline boxes on top of the ladder and secure them to the ladder; use the two web straps provided.

Page 62, appendix I. Delete the following references:
TM 11-2202, TM 11-2137, and TM 11-2239.
Add the following references:
Form 310-4

IG 354

Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

Maintenance and Repair Procedures for Lightweight Field and Mobile Shelters of Aluminum Stressed Skin Foam-Core Construction (Covering S-141/G and S-144/G Type Shelters).

TM 9-874A

TM 9-2851

TM 11-5815-205-25P

TM 38-750

Operator, Organizational, Field, and Depot Maintenance Manual: Trailer, Cargo: $\frac{3}{4}$ -Ton, 2-Wheel, M101 (2330-738-9509).

Painting Instructions for Field Use.

Organizational, Field and Depot Maintenance Repair Parts and Special Tools List for Central Office, Teletypewriter AN/MGC-17.

The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

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NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

☆ U.S. Government Printing Office: 1963-650511

TECHNICAL MANUAL

Operator's Organizational, Field, and Depot Maintenance TELETYPEWRITER CENTRAL OFFICE AN/MGC-17

11-5815-205-15 }
ANGES No. 3 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 18 October 1961

TM 11-5815-205-15, 2 November 1959, is changed as follows:

Note. The parenthetical reference to previous pages (example: "page 1 of C 2") indicates that pertinent material was published in that Changes.

Page 3, paragraph 1. Delete subparagraph and substitute:

The term *organizational equipment* as used in this manual refers to equipment authorized the using organization and which is to be installed in Shelter, Electrical Equipment S-169/MGC-17. Shelter, Electrical Equipment S-169/MGC-17 with the organizational equipment installed constitutes Teletypewriter Central Office AN/MGC-17.

Paragraph 2. Make the following changes:

Subparagraph d (page 1 of C 2). Delete subparagraph *d* and substitute:

Parts List Form. Forward DA Form 2028 recommended Changes to DA Technical Manual Parts List or Supply Manual 7, 8, or 9) to the Commanding Officer, U.S. Army Signal Material Support Agency, ATTN: MS-ML, Fort Monmouth, N.J., with comment on parts listing.

Subparagraph e. Delete subparagraph *e* and substitute:

Comments on Manual. Forward all other

comments on this publication direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N.J.

Page 4, paragraph 5. Delete paragraph 5 and substitute:

5. Components

For information regarding the components in the AN/MGC-17, refer to appendix III. Appendix III also includes a list of items provided in Shelter, Electrical Equipment S-169/MGC-17.

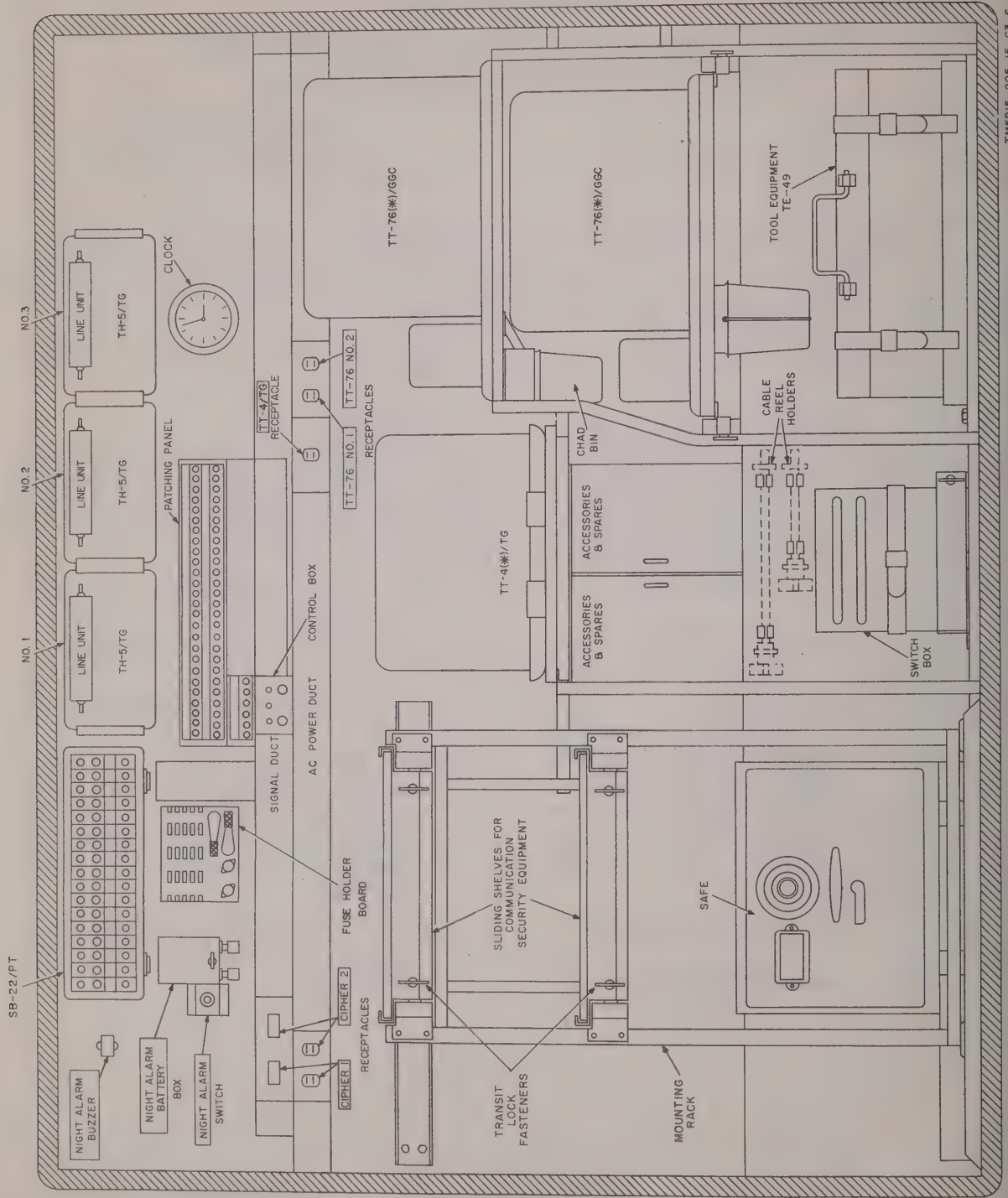
Page 5, figure 2. Change "CX-4876/U" to: CX-4763-U.

Page 7, figure 3. Add the following note to figure 3:

Note. A cable hanger is supplied instead of a shackle.

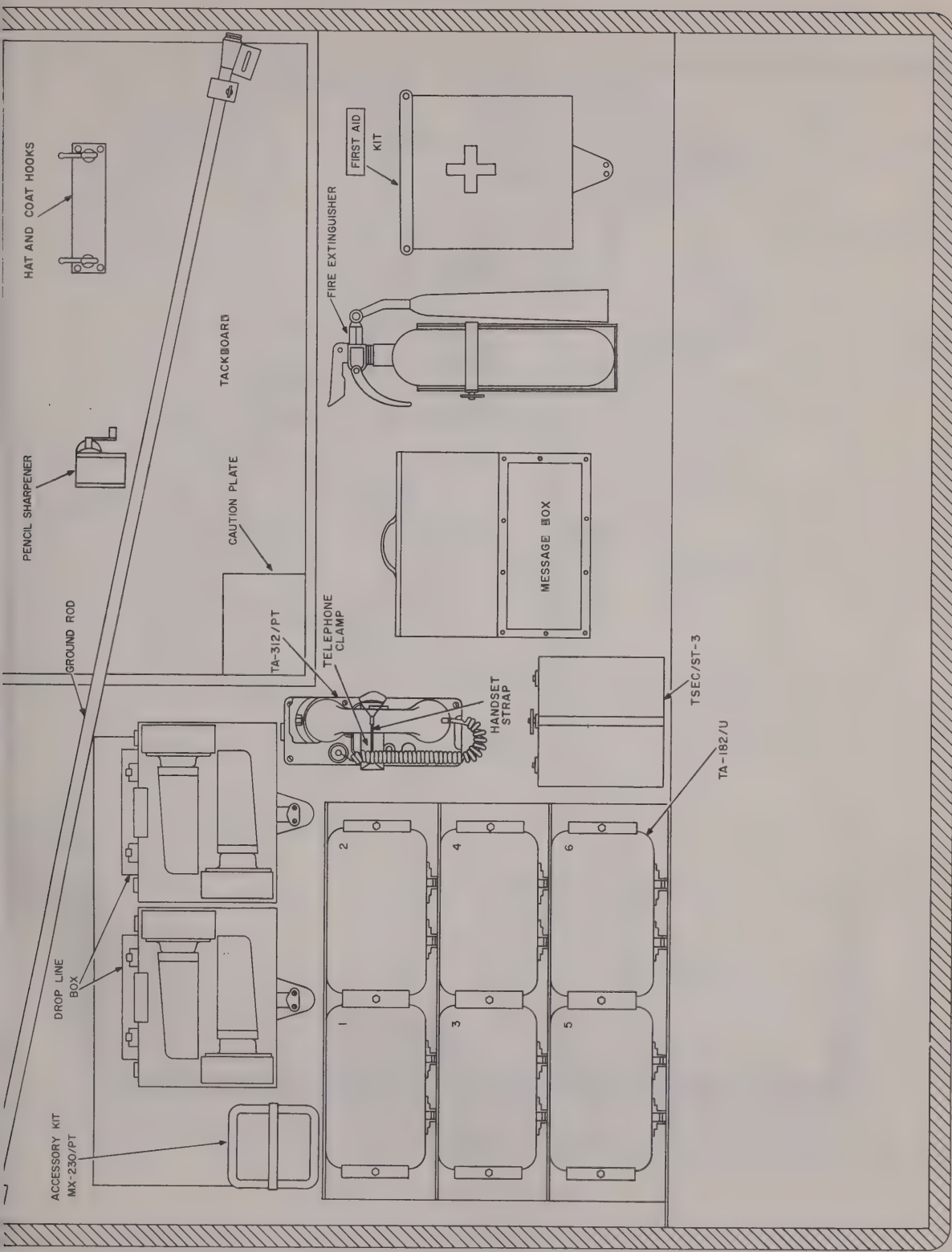
Page 9, paragraph 6. Chart: Component column: Change first line to: Shelter, Electrical Equipment S-169/MGC-17. Paragraph 8, heading. Change to: Shelter, Electrical Equipment S-169/MGC-17.

Page 10, figure 5. Change the caption to: Shelter, Electrical Equipment S-169/MGC-17.



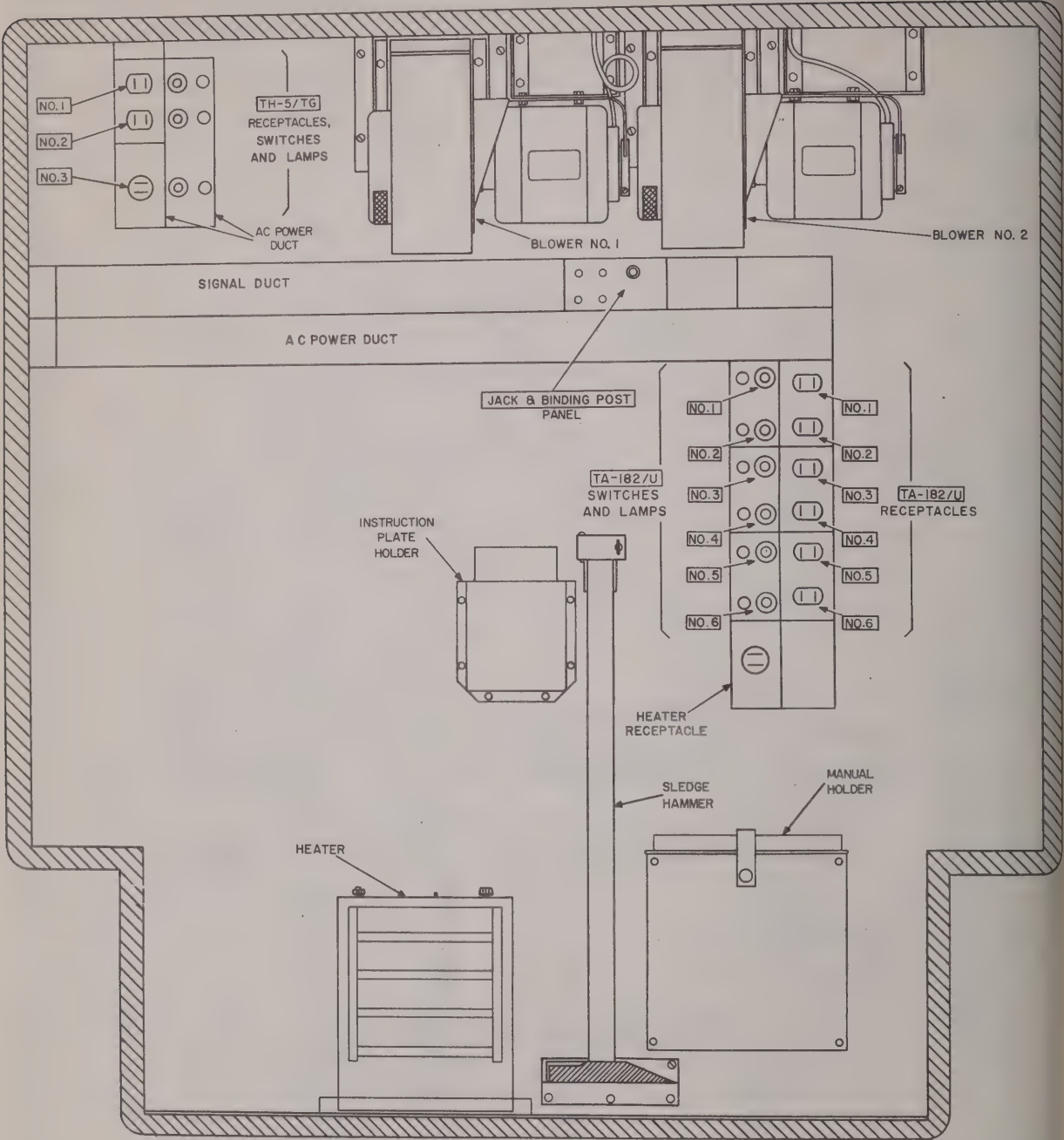
TW5815-205-15-03-6

Figure 6. Shelter, left wall.



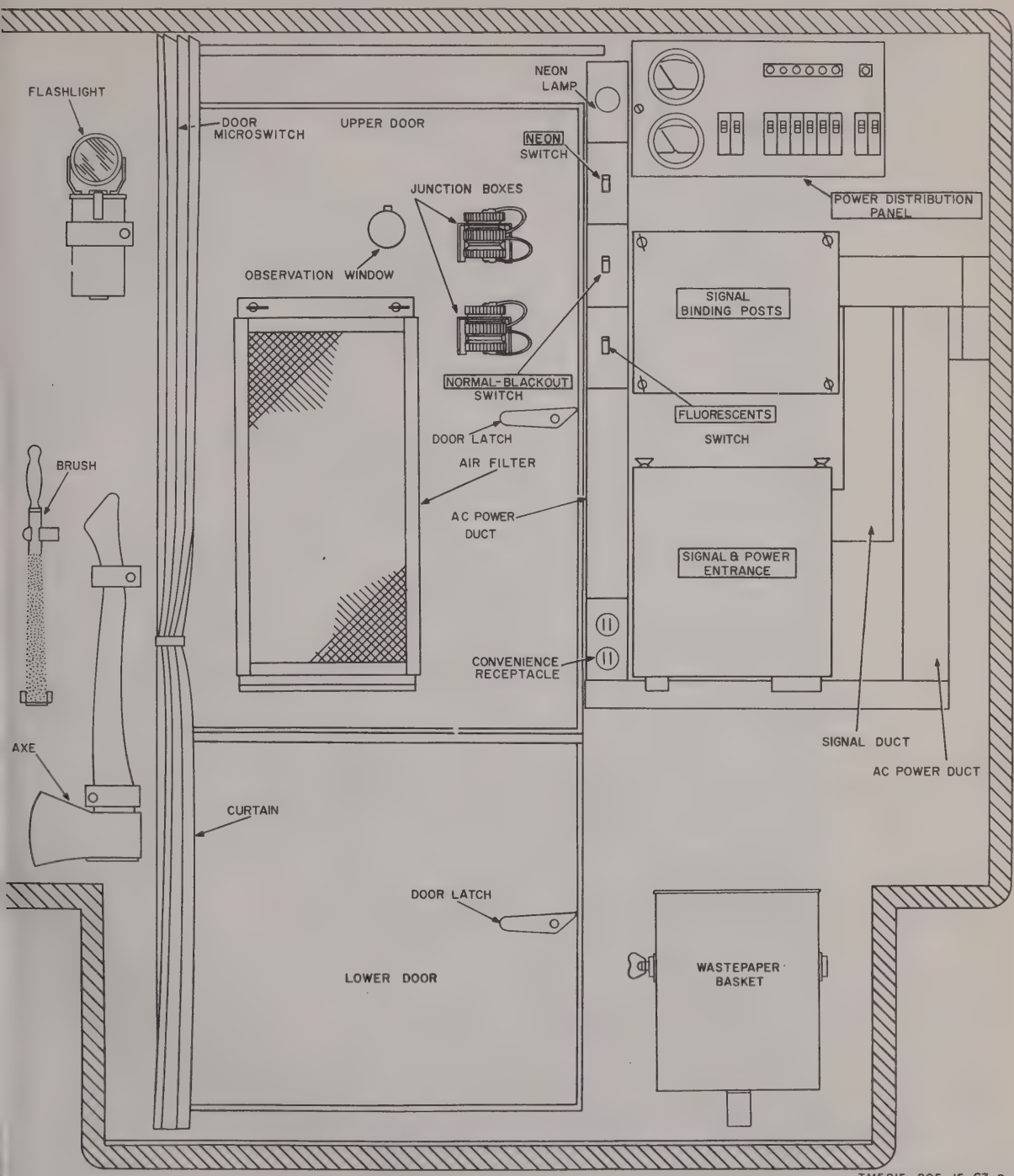
TM5815-205-15-C3-7

Figure 7. Shelter, right wall.



TM5815-205-15-C3-8

Figure 8. Shelter, front wall.



TM5815-205-15-C3-9

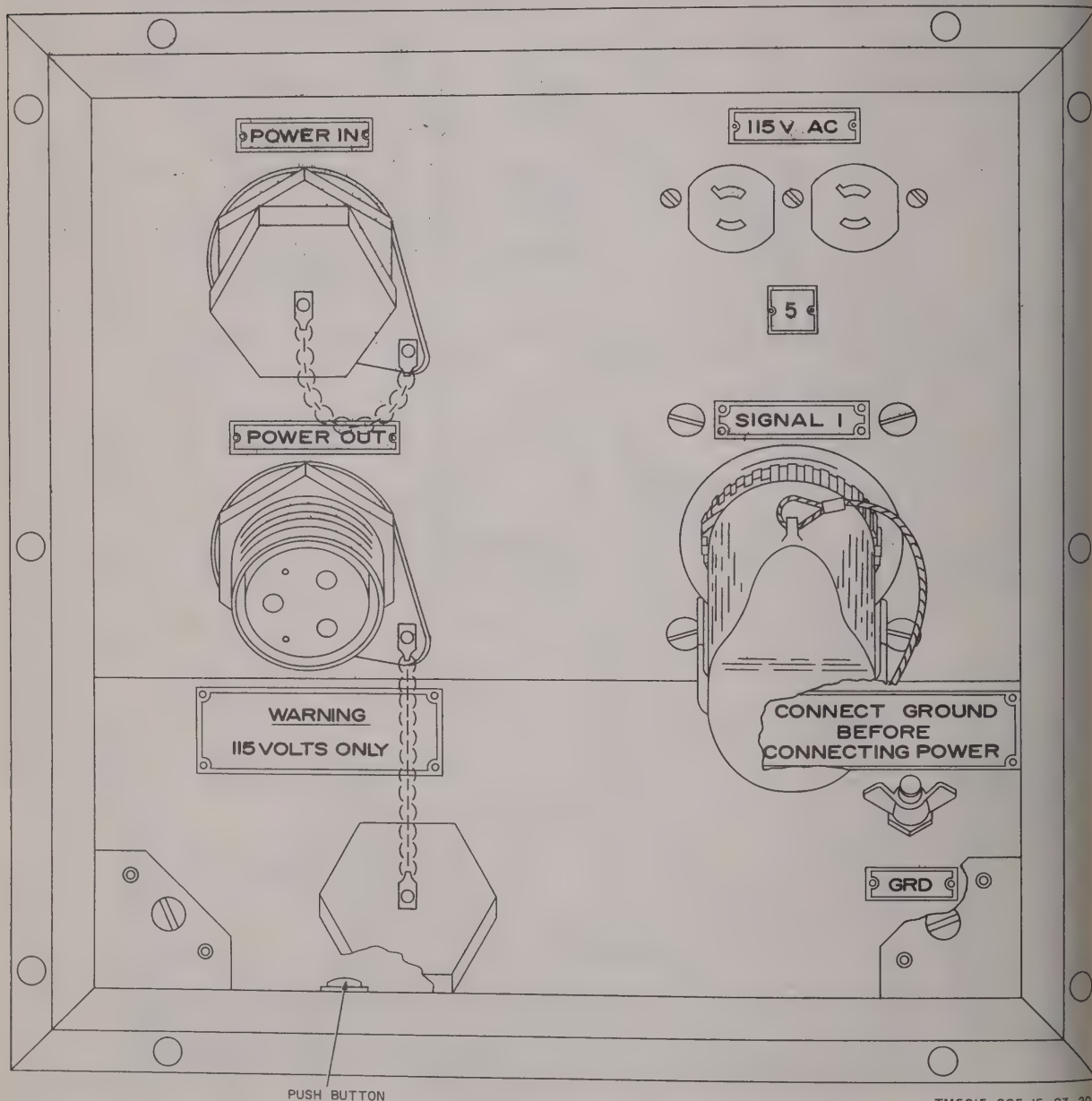
Figure 9. Shelter, rear wall.

Page 16, paragraph 10. Chart, SIGNAL BINDING POSTS box pair No. column. Delete line 5.
 SIGNAL & POWER ENTRANCE box SIGNAL 1 receptacle pair No. column. After line 4, add: 19 through 25 (spare).

Paragraph 11, lines 5 and 14. Change "lug" to: stud.

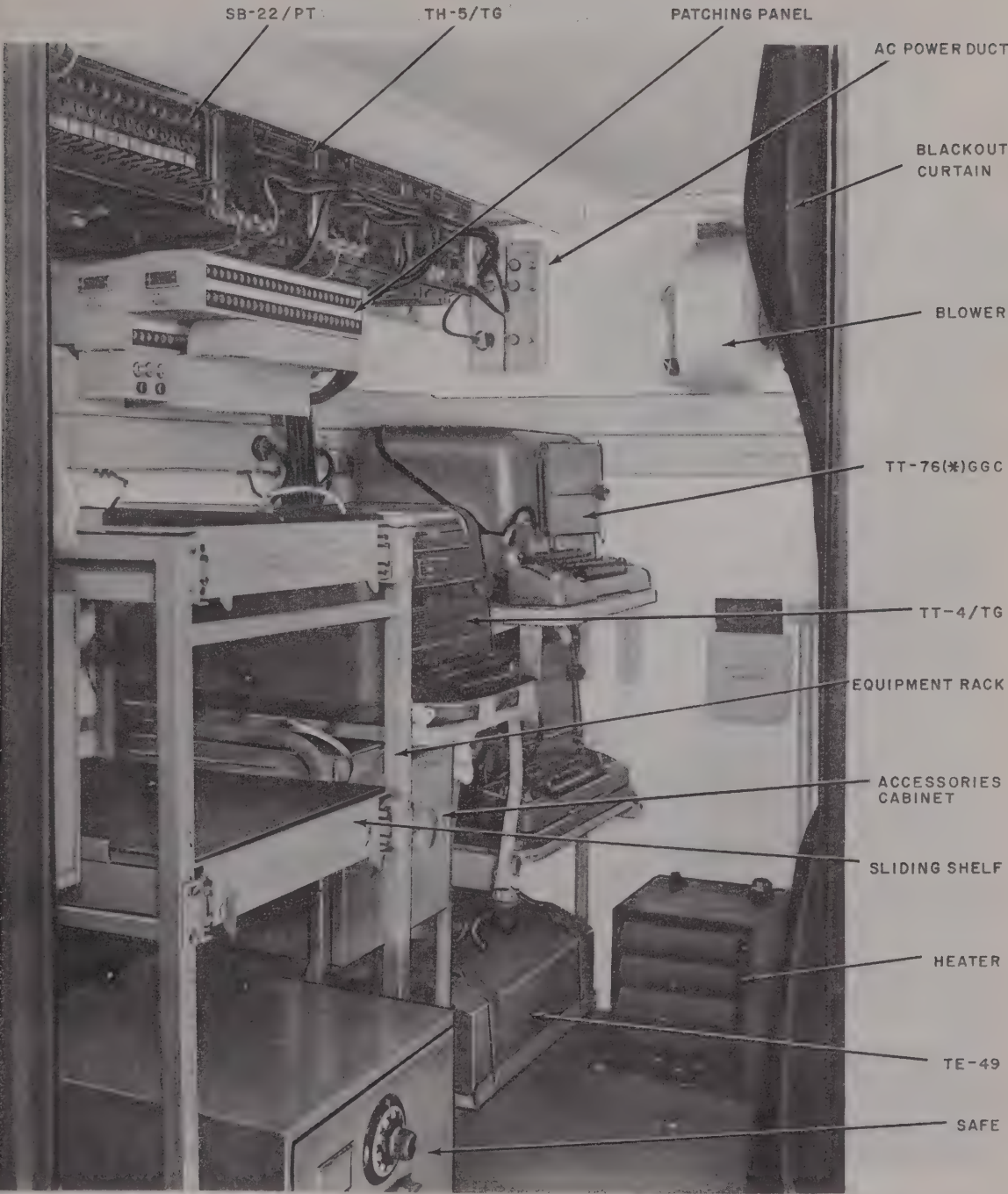
Paragraph 12, line 3. Delete "and below."

Page 18, figure 12. Delete figure 12 and substitute new figure 12:



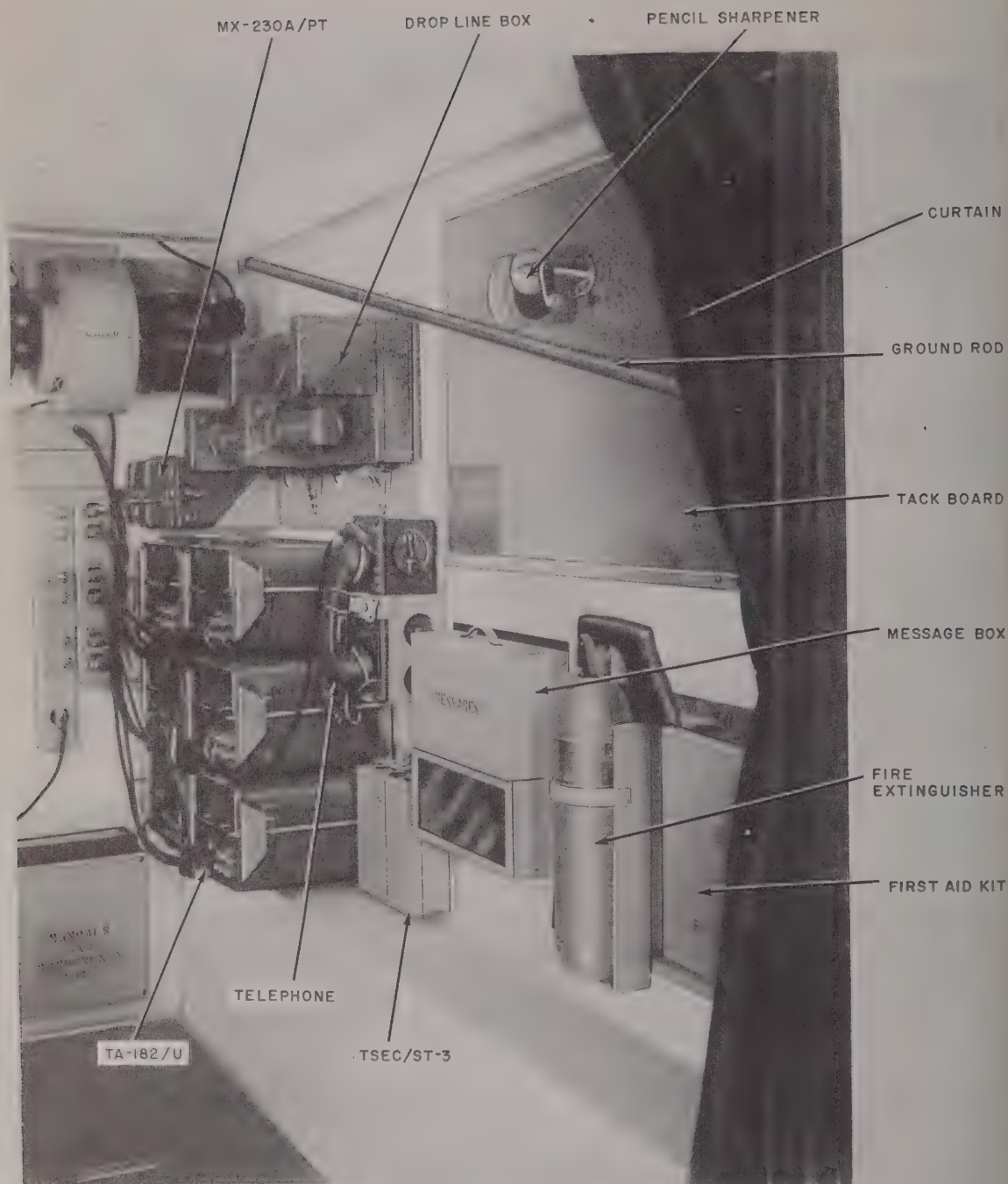
TM5815-205-15-C3-20

Figure 12. SIGNAL & POWER ENTRANCE box.



TM5815-205-15-C3-1

Figure 15.1. Shelter, left side.



TM5815-205-15-C3-2

Figure 15.2. Shelter, right side.

Page 21, paragraph 20. Make the following changes:

Subparagraph *g*, line 1. Change "CX-4876/U" to: CX-4763/U.

Last line. Change "CX-A876/U" to: CX-4763/U.

Paragraph 21*a*, line 2. Change "(TM 11-2202)" to: (TM 11-5805-262-12).

Page 22, paragraph 22. After first sentence, add: To provide light inside the shelter, perform the preoperational procedures given in paragraphs 41, 42, and 43.

Page 23, paragraph 24. Chart: In Upper binding post, Color column, opposite wires 11 and 12. Change "White" to: Black.

In Lower binding post, Color column: Opposite wire No. 4. After "Pink" add: or red.

Opposite No. 11. Change "Slate" to: Dark blue.

Opposite No. 12. Change "Light blue" to: Orange.

Page 24, paragraph 25b(3), line 4. Change (fig. 6)" to: (fig. 8).

Page 27, paragraph 26. Make the following changes:

Subparagraph *a*(7)(*c*). Add the following after subparagraph (*c*):

(*d*) Store the original cover in the ACCESSORIES CABINET for use if the TT-76(*)/GGC is restored to its original configuration.

Subparagraph *b*. Delete the last sentence.

Page 28, paragraph 27. Make the following changes:

Subparagraph *a*(5), chart, Wire color column, line 1. Change "Black" to: White.

Line 2. Change "White" to: Black.

Paragraph 28*d*, line 2. Change "CX-4876/U" to: CX-4763/U.

Subparagraph *g*, line 3. After "plugs" add: P1 and P2.

Subparagraph *l*, line 2. Change "CX-4876/U" to CX-4763/U.

Page 29, paragraph 29a. Delete subparagraphs (11) and (12) and substitute: (11) Remove the front panel of each TA-182/U (fig. 7) and install the appropriate identification

holder in the upper right-hand corner of the panel; use the screw, nut, and washer provided with the identification holder. Replace the front panel.

Subparagraph *b*(1). Chart: In Color column, make the following changes: Line 8. After "Pink" add: or red. Line 17. Change "White" to: Black. Line 18. Change "Slate" to: Dark blue.

Line 19. Change "White" to: Black. Line 20. Change "Slate" to: Dark blue.

Line 21. Change "White" to: Black. Line 22. Change "Light blue" to: Orange.

Line 23. Change "White" to: Black. Line 24. Change "Light blue" to: Orange.

Page 30, paragraph 33e, line 2. Delete "ACCESSORIES & SPARES cabinet" and substitute: underside of the shelf. Line 6. Change "rim" to: pin.

Page 32, paragraph 36a(3). Add the following after subparagraph (3):

(3.1) Disconnect the plug of the CX-4763/U from the CIPHER 1 and the CIPHER 2 receptacles on the shelter wall.

(3.2) Insert a TELETYPE ONLY plug in the CIPHER 1 and CIPHER 2 receptacles.

Page 33, paragraph 36. Make the following changes:

Subparagraph *b*(8), line 2. Add the following after "line 12:" and 17.

Subparagraph (10), line 2. Add the following after "line 11:" and 17.

Subparagraph *c*(2). Add the following after subparagraph (2):

(2.1) Place a test tape in transmitter-distributor No. 1 and operate the STOP-START-FEED-RETRACT switch to START. The test message should be received on TT-76(*)/GGC No. 1 and No. 2.

(2.2) Repeat the test given in (2.1) above, using transmitter-distributor No. 2.

Subparagraph *d*(2). Add the following after subparagraph (2):

- (3) Turn off the TT-4/TG and TT-76(*)/GGC No. 1 and No. 2.
- (4) Remove the TELETYPE ONLY plugs from the CIPHER 1 and CIPHER 2 receptacles and store them in the storage receptacles.
- (5) Connect the plug of each CX-4763/U to its respective cipher receptacle on the shelter wall.

Page 34, paragraph 37. Make the following changes.

Subparagraph a(5). Delete the chart and substitute.

From jack	To jack
TT-76 No. 1 REC	CIPHER 1 PRINTER
TT-76 No. 1 SEND	CIPHER 1 KBD SIG
TT-76 No. 1 TD	CIPHER 1 TD SIG
TT-76 No. 2 REC	CIPHER 2 PRINTER
TT-76 No. 2 SEND	CIPHER 2 KBD SIG
TT-76 No. 2 TD	CIPHER 2 TD SIG
TH-5 LINE 1 4WS 2W	TH-5 LINE 2 4WS 2W

Delete subparagraph b(1) (a) and substitute:

- (a) Place the P-C switch on TSEC/KW-9 No. 1 and No. 2 in the P position.

Page 36, paragraph 39b. Delete subparagraphs (2) and (3) and substitute:

- (2) Use the sling assembly which is attached to the tiedown eye at the front of the shelter and place the bracket on the other end of the sling assembly under the side rail, at the rear.
- (3) Use the sling assembly which is attached to the tiedown eye at the rear of the shelter and place the bracket on the other end of the sling assembly under the front of the side rail.

Page 38, paragraph 41a(2). Before the first sentence, add: When all connections have been made.

Page 39, paragraph 42d. Change "stud" to stub, in the following places:

Subparagraph (1), line 2.

Subparagraph (2), line 2.

Subparagraph (3), lines 2 and 3.

Page 40, paragraph 45. Delete paragraph

45 and substitute new paragraph 45, and add figures 19.1, 19.2, and 19.3.

45. Cable Connection, 26-Pair

a. Removal of Dust Cover with Locking Ring on Outer End (fig. 19.1).

- (1) Grasp the locking ring on the outer end of the dust cover and turn it counterclockwise until the outer end of the dust cover is unlocked.
- (2) Continue to turn the dust cover and the receptacle counter clockwise until the upper end is unlocked.
- (3) Carefully lift the dust cover from the receptacle.

b. Removal of Dust Cover With Flange on Outer End (fig. 19.2).

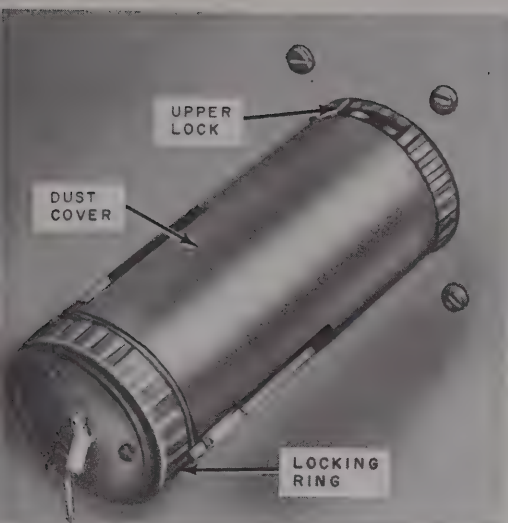
- (1) Grasp the dust cover and the receptacle and turn them counterclockwise until the upper end is unlocked.
- (2) Lift the upper end of the dust cover off the receptacle.
- (3) Swing the dust cover upward and outward until the flange unhooks from the lug on the outer end of the receptacle.

c. Connection of 26-Pair Cable (fig. 19.3).

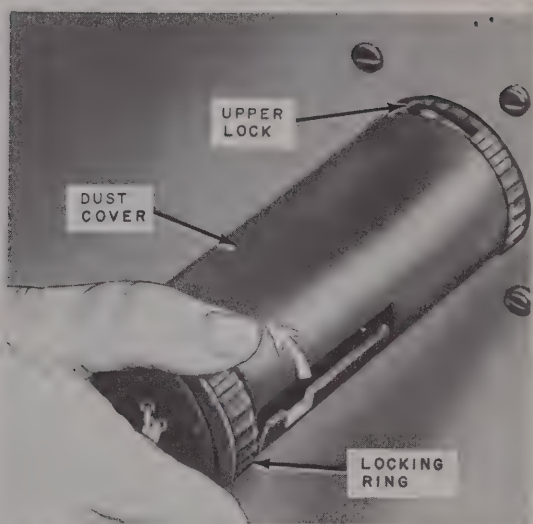
- (1) Remove the dust cover from the 26-pair cable connector (a or b above).
- (2) Place the 26-pair cable connector on the receptacle. Be sure the connector is positioned squarely on the receptacle.
- (3) Gently press the connector into the receptacle.

Caution: The connector or receptacle inserts may be damaged if the connector is not properly positioned or if too much pressure is required to interconnect the units.

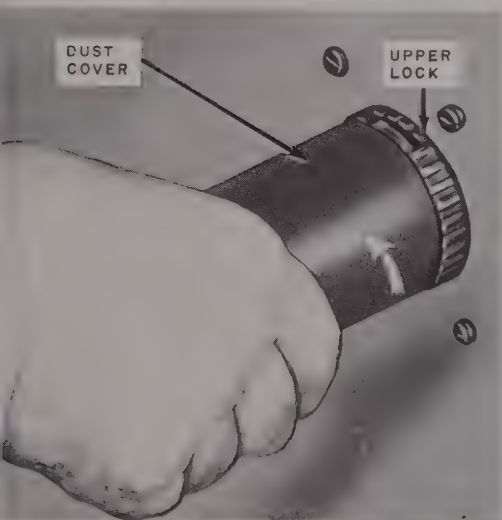
- (4) Grasp the locking ring on the 26-pair cable connector and turn it clockwise gently until the outer end of the connector is locked to the receptacle.
- (5) Continue to turn the connector and the receptacle clockwise until the upper end of the connector is securely locked to the receptacle.
- (6) Check to be sure the locks on the outer and upper ends of the receptacle and the connector are securely locked.



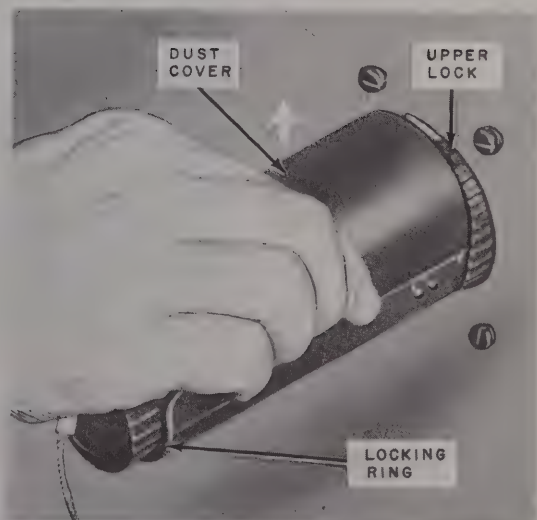
A. 26-PAIR RECEPTACLE WITH DUST COVER INSTALLED.



B. UNLOCKING LOCKING RING.



C. UNLOCKING UPPER LOCK.



D. REMOVING DUST COVER.

TM5815-205-15-C3-21

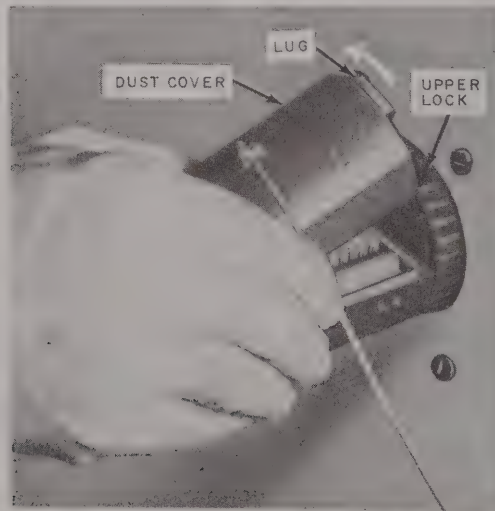
Figure 19.1. Removal of dust cover with locking ring on outer end.



A. 26-PAIR RECEPTACLE WITH DUST COVER INSTALLED.



B. UNLOCKING UPPER LOCK.



C. REMOVAL OF DUST COVER.

TM5815-205-15-03-22

Figure 19.2. Removal of dust cover with flange on outer end.

26-PAIR
CONNECTOR

26-PAIR
RECEPTACLE

A. 26-PAIR CONNECTOR AND 26-PAIR RECEPTACLE BEING INTERCONNECTED.

26-PAIR
CONNECTOR

26-PAIR
RECEPTACLE

26-PAIR
CONNECTOR LOCK

B. LOCKING OUTER END OF 26-PAIR CONNECTOR.

26-PAIR
CONNECTOR

UPPER
LOCK

C. LOCKING UPPER END OF 26-PAIR CONNECTOR.

TM5815-205-15-C3-23

Figure 19.3. Interconnection of 26-pair connector and receptacle.

Disconnecting 26-Pair Connector.

- (1) Grasp the locking ring on the 26-pair cable connector, near the cable, and turn it counterclockwise until the lock at each end of the connector is released.
- (2) Carefully lift the 26-pair cable connector from the receptacle.

Caution: Do not twist the connector to remove it from the receptacle.

- (3) Replace the dust covers on the 26-pair cable connector and the receptacle (*e* or *f* below).

Caution: Do not drop or lay the open connector on the ground.

e. Replacement of Dust Cover With Locking Ring on Each End.

- (1) Place the dust cover squarely on the receptacle.
- (2) Hold the dust cover in position. Grasp the locking ring on the outer end of the dust cover and turn the locking ring clockwise until the outer end is locked.
- (3) Turn the dust cover and the receptacle clockwise until the upper end is securely locked.

f. Replacement of Dust Covers With Flange on Outer End.

- (1) Place the hole in the flange over the lug on the outer end of the receptacle.
- (2) Swing the upper end of the dust cover down, squarely onto the receptacle.
- (3) Grasp the dust cover and the receptacle and turn both items clockwise until the dust cover is securely locked in position.

Page 41, paragraph 46b. Add the following after subparagraph (2):

- (3) Close and fasten the cover.

Page 42, paragraph 49b.

Note. After "14," add: and TH-5/TG No. 2 is connected through normal-through jacks to lines 15 and 16.

Page 49. Make the following changes:

Change the title of chapter 3 to:
OPERATOR AND ORGANIZATIONAL MAINTENANCE.

Paragraph 54, heading. After "of," add: Organizational.

Subparagraph *d.* Add the following after the warning notice:

e. To determine which items may be replaced by second echelon maintenance personnel, refer to appendix II.

Paragraph 55. Add the following after subparagraph *g*:

h. For other maintenance procedures, refer to TM 11-5805-204-15.

Paragraph 56. Add the following after subparagraph *j*:

k. Refer to TM 11-5805-204-15 for additional maintenance procedures.

Page 50, paragraph 57. Make the following changes:

Add the following after subparagraph *e*:

f. Inspect the fire extinguishers (TM 11-5805-204-15).

Add paragraphs 57.1 and 57.2 after paragraph 57:

57. 1. Troubleshooting Procedures

The first step in servicing defective equipment is to sectionalize the fault. Trouble may be located in the interconnecting wire cable equipment. Most faults outside the shelter can be sectionalized by using the tests listed in paragraphs 35 through 37. Before troubleshooting, refer to the applicable schematic wiring diagrams.

57. 2. Tools and Test Equipment

Tools and test equipment authorized for use by organizational maintenance personnel for the S-169/MGC-17 are listed in appendix II. Refer to the applicable maintenance allocation chart for tools and test equipment authorized for use with the organizational equipment.

Page 51, paragraph 58. Chart: Action column, item No. 7. After first line, add:

Caution: Under blackout conditions, this test may be made only if curtains are closed. After testing, operate the NORMAL-BLACKOUT switch to BLACKOUT.

Page 53. Chart: Add paragraphs 58.1, 58.2, and 58.3 after paragraph 58:

58.1. Duct Cable Test

When trouble is suspected in the dust cable, disconnect all equipment from each end of the affected pairs. Test each pair for opens, shorts, crosses, and grounds.

58.2. Additional Troubleshooting Data

The following schematic and wiring diagrams are used in troubleshooting, in addition to those in the publications listed in appendix I:

Diagram	Fig. No.
Signal schematic-wiring diagram	20
Ac power schematic-wiring diagram	27

58.3. Removal and Replacement

Refer to TM 11-5805-204-15 for removal or replacement instructions for all components of Shelter, Electrical, Electrical Equipment S-



1. WIRING OF **POWER DISTRIBUTION PANEL** IS 18 GAGE EXCEPT AS OTHERWISE INDICATED.
2. 1/4 IN. WIDE BRAID LEAD.
3. WIRING IS 14 GAGE UNLESS OTHERWISE INDICATED.
4. INDICATES EQUIPMENT MARKING.
- TM58

Figure 27. Ac power schematic-wiring diagram.

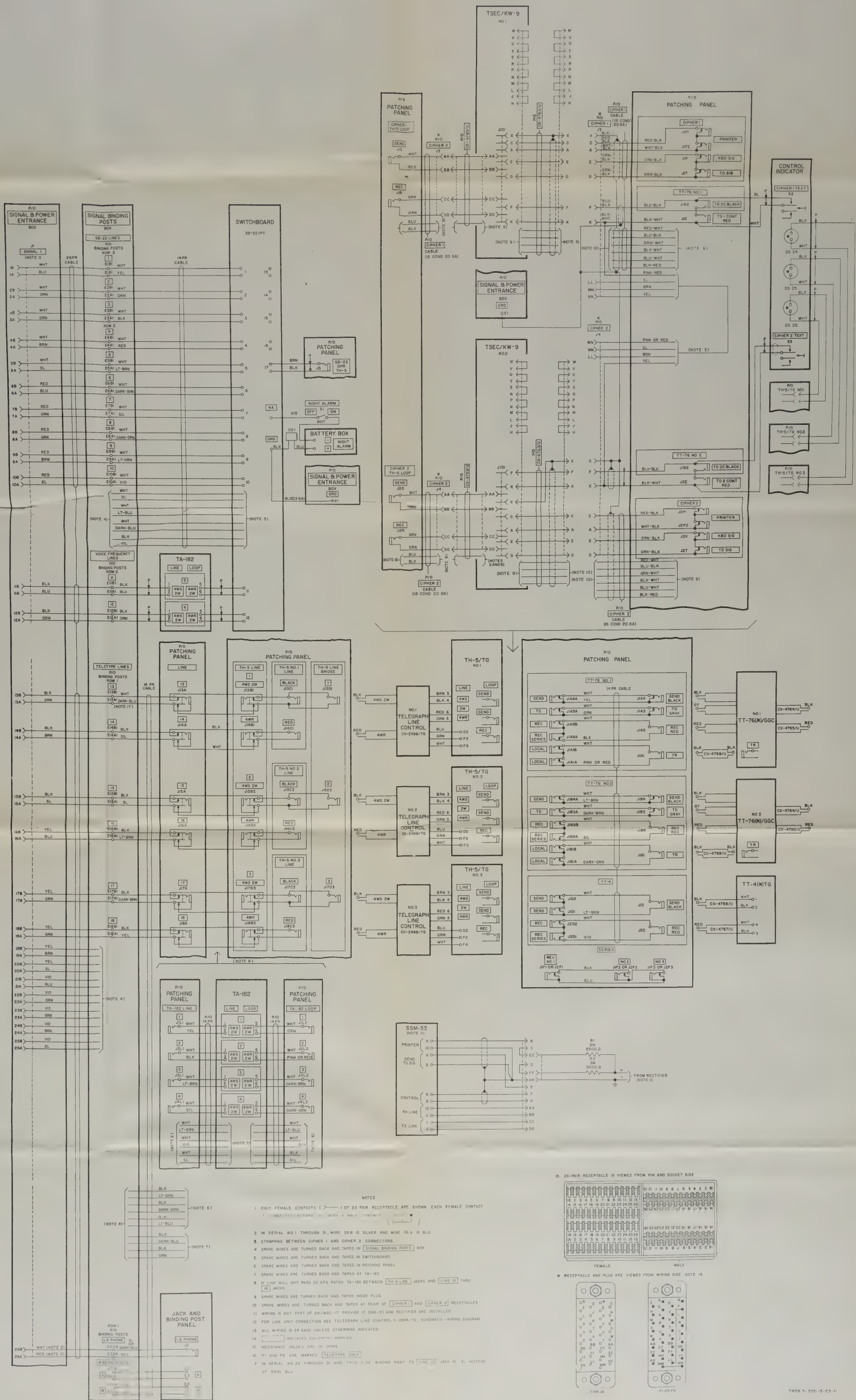
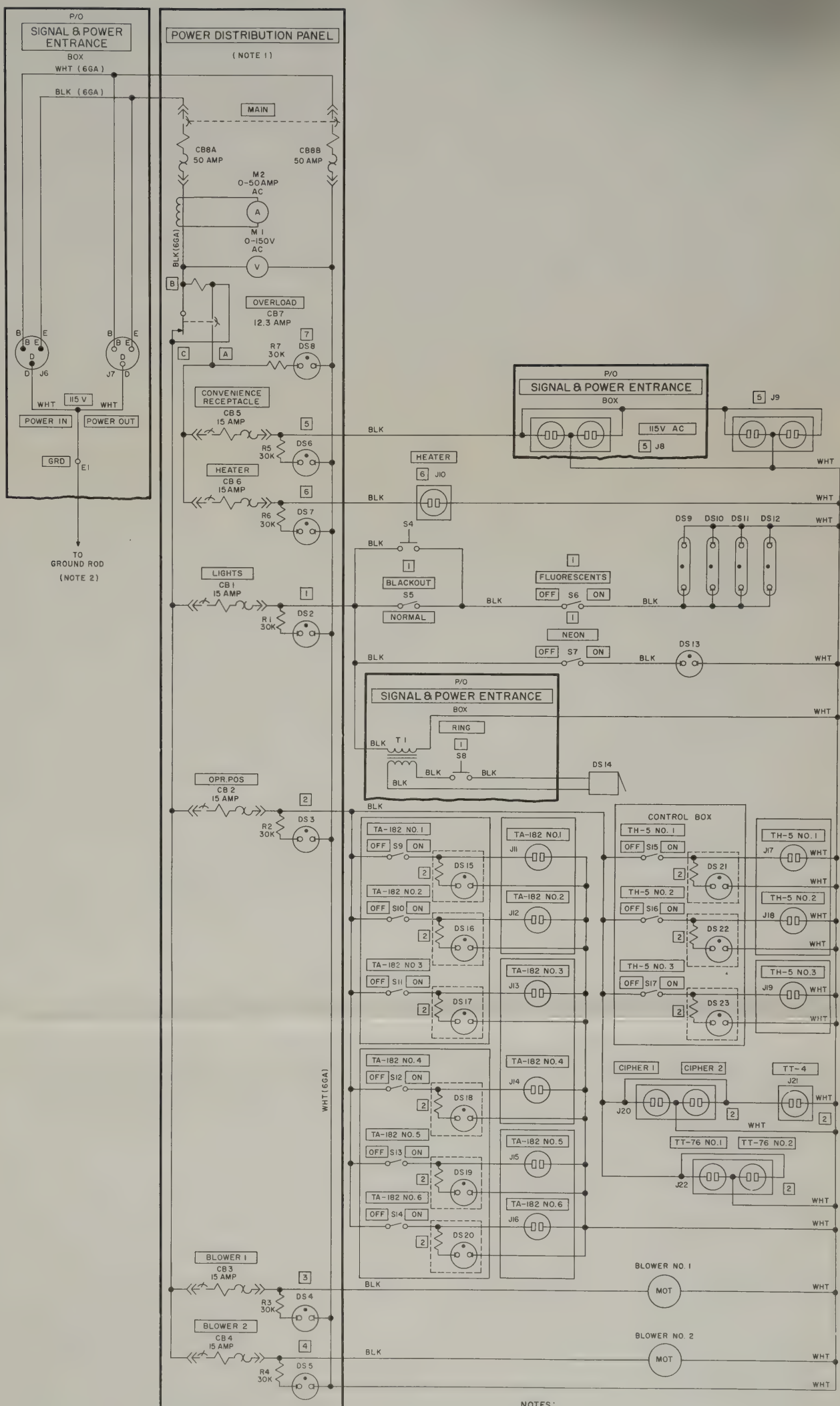


Figure 26. Signal schematic-wiring diagram



NOTES:

1. WIRING OF **POWER DISTRIBUTION PANEL** IS 18 GAGE EXCEPT AS OTHERWISE INDICATED.
2. 1/4 IN. WIDE BRAID LEAD
3. WIRING IS 14 GAGE UNLESS OTHERWISE INDICATED.
4. INDICATES EQUIPMENT MARKING.

TM5815-205-15-C3-12

Figure 27. Ac power schematic-wiring diagram.

MGC-17. To remove organizational equipment reverse the installation procedures described in paragraphs 24 through 33.

Page 54, paragraph 59. Make the following changes:

Subparagraph *b*. Delete the first sentence and substitute: The Charts in (1) and (2) below compare the color code of each pair of the original 14-pair cabling to the corresponding pairs in the authorized replacement cables. Subparagraph (1), add to the heading: *pair numbers 1 through 14*. In Original cable color code, Ring column, line 4. After "Pink" add: or red.

Line 14. Change "Pink" to: Silver.

Page 55, paragraph 59b(2). Delete subparagraph (2) and substitute:

(2) *Color coding, 14-pair cabling, pairs 13 through 26.*

Pair No.	Original cable color code		Replacement cable color code	
	Tip	Ring	Tip	Ring
13	White	Dark blue	Black	Green
14	Black	Silver	Black	Brown
15	Black	Gray (slate)	Black	Gray (slate)
16	Black	Light brown	Yellow	Blue
17	Black	Dark brown	Yellow	Orange
18	Black	Yellow	Yellow	Green
19	Black	Light blue	Yellow	Brown
20	Black	Dark blue	Yellow	Gray (slate)
21	Black	Light green	Violet	Blue
22	Black	Dark green	Violet	Orange
23	Black	Orange	Violet	Green
24	Black	Violet	Violet	Brown
25	Black	Red	Violet	Gray (slate)
26	Gray (slate)	Red	White	Red

Page 56. (Fold-out) Delete figure 26 and substitute new figure 26:

Delete figure 27 (fold-out) and substitute new figure 27:

Page 59, paragraph 63e. After the last sentence add: Each fluorescent fixture is equipped with starter, ballast, lamp tube, and radio-interference filter. A detailed description is given in TM 11-5805-204-15.

Add chapter 4.1 after chapter 4.

CHAPTER 4.1

FIELD AND DEPOT MAINTENANCE

Scope and Field and Depot Maintenance

Field and depot maintenance consists of the repair and fabrication of mechanical parts, the replacement of mechanical parts not available from the organization, and the replacement of telephone harness and cable. To determine which equipment must be repaired or replaced by field and depot maintenance personnel, refer to appendix

Removal and Replacement

Refer to TM 11-5805-204-15 for removal and replacement instructions for all components of Electrical Equipment S-169/MGC-17 listed below.

Organizational Equipment. To remove organizational equipment, reverse the procedures described in paragraphs 24 through 33. **SB-22/PT.** If the switchboard is to be re-

moved or replaced, the two extra line packs should be retained if another switchboard is to be installed.

c. TH-5/TG. If a TH-5/TG is to be replaced, it should be restored to its normal condition by reversing the procedure given in paragraph 25. The line unit must be retained for use with the new TH-5/TG. The D2-F2 strap must also be replaced.

d. TT-76()/GGC.* If the TT-76(*)/GGC is to be replaced, it should first be restored to its normal condition by reversing the procedure given in paragraph 26a. The replacement cover cords must be retained for use with the new TT-76(*)/GGC. Retain the patching cord plugged into the TR jack on the machine.

e. TT-4()/TG.* If a page teletypewriter is to be removed or replaced, the two cords should be removed and retained for use on the replacement machine.

f. *Telephone Set.* If the telephone set is to be removed, be sure to retain Handset-headset H-144/U and Electrical Cord Assembly CX-4695/U.

g. *TSEC/KW-9.* Retain Electrical Special Purpose Cable Assembly CX-4763/U for use with the new TSEC/KW-9.

63.3. Repair of Shelter Skin

If the exterior skin of the shelter is damaged or punctured, use Patch Kit, Shelter, Electrical Equipment (Federal stock No. 5410-783-6250) to repair holes in the exterior skin of the roof or sides of the shelter. Follow the procedures provided with the kit and those given below, to repair the shelter skin.

a. Preparation of Shelter Skin and Patch.

- (1) Check the damaged area to determine if the insulation has been gouged out of the shelter wall. If necessary, fill the hole in the insulation with a clean noncombustible material.

Do not use the glass cloth.

- (2) Clean the shelter skin around the damaged area within a radius of 3 inches of the hole. Use sandpaper, a knife, or a scraper to remove all paint, dirt, mud, or other foreign material. *Do not* touch the cleaned area with your fingers.

- (3) Cut a piece of glass cloth (patch) about 2 inches larger than the hole.

b. *Mixing Adherent (Glue).* The area to be covered determines the amount of adherent required; the surrounding air temperature indicates whether the cold weather promoter is required and the amount required. Follow the procedures given below, to mix the ingredients:

- (1) Pour 3 ounces of resin into the mixing cup for each square foot of area to be covered.
- (2) Add the curing agent and cold weather promoter to the resin in the amounts shown in the chart below. These amounts are for 3 ounces of resin; increase the curing agent and cold weather promoter in proportion to the amount of resin required.

Temperature (of)	Curing agent No. 237 (eye dropper filled to red line)	Cold weather promoter (eye dropper filled to red line)
Above 55.....	1	No
20-55.....	1	
Below 20.....	1	

- (3) Mix the ingredients thoroughly and then apply the mixture to the patch and shelter surface as indicated in below.

c. Application of Mixture and Patch.

- (1) Spread a liberal coating of the mixture over the surface of the entire area to be patched. Use the spatula or brush.
- (2) Place the glass cloth patch over the hole; be sure it is centered. Press the patch lightly with the spatula to be sure it is firmly embedded in the mixture.
- (3) Spread a second liberal coating of the mixture over the patch. Work from the center of the patch toward the edges. Be sure the patch is completely covered. Check the edges of the patch to be sure they are flat and are firmly embedded in the mixture.
- (4) Allow the patch to dry between 4 and 24 hours, depending on the drying conditions.

Note. To accelerate low temperature drying, heat the patch with warm, dry air or radiant heat. *Do not* use an open flame.

- (5) After the patch is thoroughly dry, smooth the surface with sandpaper and paint it.

d. Cleaning Tools and Storing Components.

- (1) Tightly recap the containers and store them in a cool dry place. The shelf life is seriously affected by heat.
- (2) Wait until the mixture is thoroughly dry and then flex the cup and spatula to remove the mixture. Discard the paintbrush. Store the spatula and the cup with the containers.

63.4. Final Testing Procedure

The tests given in this paragraph are designed to measure the performance capabilities of a required equipment. These tests are limited to tests for the equipment and fixtures supplied

rt of the S-169/MGC-17. When it is
ary to test the communications equip-
refer to the applicable technical manual
al testing procedures.

Wiring and Cable. Check all signal (fig.
nd power (fig. 27) wiring for opens,
, crosses, and grounds with a multimeter
ged as an ohmmeter. Check the wiring
t the wiring diagram to be sure that all
are properly terminated.

b. Mechanical Tests. Inspect mechanical
parts for proper mounting and to be sure that
all mounting facilities are securely tightened.
If the item performs an operation, such as a
door hinge, perform an operational test in
addition to an inspection.

Page 60, paragraph 64. Add the following
after subparagraph *e*:

e.1. Check to be sure the drain plug in
the floor is tightened securely to pre-
vent leakage.

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

DASA (6)
USASA (2)
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 except CSigO (18)
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USAARTYBD (1)
USAARMBD (2)
USAIB (1)
USARADB (2)
USABELCTBD (1)
USAAVNBD (1)
USAATBD (1)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
MDW (1)
Armies (2)
Corps (2)
Instl (2)
Ft Monmouth (63)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USATC FA (2)
USATC Inf (2)
USAOMC (3)
Svc Colleges (2)
Br Svc Sch (2)
GENDEP (2) except
 Atlanta GENDEP (None)
Sig Sec, GENDEP (5)
Sig Dep (12)
WRAMC (1)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
OSA (1)

USAEPG (2)
AFIP (1)
AMS (1)
Army Pictorial Cen (2)
EMC (1)
Yuma Test Sta (2)
USACA (3)
USASSA (20)
USASSAMRO (1)
USASEA (1)
USA Caribbean Sig Agcy (1)
USA Sig Msl Spt Agcy (13)
Sig Fld Maint Shops (3)
USA Corps (3)
JBUSMC (2)
AFSSC (1)
Units org under fol TOE:
 (2 cy each UNOINDC)
6-555
7
11-5
11-7
11-8
11-15
11-16
11-17
11-18
11-55
11-57
11-58
11-85
11-86
11-97
11-117
11-155
11-500 (AA-AE) (4)
11-557
11-587
11-592
11-597
17

NG: State AG (4); units—same as Active Army except allowance is one copy to each unit.
USAR: None.

For explanation of abbreviations used, see AR 320-50.

MANUAL }
15-205-15 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 2 November 1959

TELETYPEWRITER CENTRAL OFFICE AN/MGC-17

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

manual contains a description and Teletypewriter Central Office AN/fig. 1) and instructions for its operation, and maintenance. It includes instructions for operation under usual conditions and for cleaning and inspecting the equipment. Information on system items for Teletypewriter Central Office MGC-17 is contained in TM 11-5.

Organizational equipments are covered in their respective technical manuals. "Organizational equipment" is used in this manual to indicate components of MGC-17 which are normally supplied using organization. These items are in paragraph 5b. A complete list of items is contained in appendix I.

Information about the Communication Security Equipment is not included in the instructions. Sufficient information is provided, however, to permit installation and use of the Communication Security Equip-

ment nomenclature followed by (*) is used to indicate all models of the equipment covered in this manual. Thus, Teletypewriter MGC represents Teletypewriter TT-4B/TG; Teletypewriter Reperforator-Transmitter TT-76 represents Teletypewriter Reperforator-Transmitter TT-76A/GGC, Teletypewriter Reperforator-Transmitter TT-76B/GGC.

Unsatisfactory Equipment Report

Fill out and forward DA Form 468 (Unsatisfactory

Equipment Report) to Commanding Officer, U. S. Army Signal Equipment Support Agency, Fort Monmouth, N. J., as prescribed in AR 700-38. Fill out and forward DD Form 787-1 (Electronic Failure Report — Signal Equipment) on Communication Security Equipment to Commanding Officer, U. S. Army Signal Communications Security Agency, Arlington Hall Station, Arlington 12, Va., ATTN: SIGCR-4.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army). Forward DD Form 6 on Communication Security Equipment to Commanding Officer, U. S. Army Signal Communications Security Agency, Arlington Hall Station, Arlington Hall 12, Va., ATTN: SIGCR-4.

c. Preventive Maintenance Forms. Prepare preventive maintenance forms for the main components of Teletypewriter Central Office AN/MGC-17 as specified in appropriate technical manuals (app. I). Prepare preventive maintenance forms for Communication Security Equipment as specified in forms provided by the Commanding Officer, USASCSA.

d. Comments on Maintenance Allocation Chart. Any comments concerning omissions and discrepancies in the maintenance allocation chart (app. II) will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U. S. Army Signal Equipment Support Agency, Fort Monmouth, N. J., ATTN: SIGFM/ES-M.

e. Comments on Manual. Forward all comments on this publication direct to Commanding Officer, U. S. Army Signal Publications Agency, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

Teletypewriter Central Office AN/MGC-17 is an air- or vehicular-transportable voice-frequency (VF) telegraph switching center. It is used as a telegraph central office in a division area of an area type communications system. It contains facilities for three teletypewriter circuits which may be operated full-duplex or half-duplex. Communication Security Equipment (on-line or off-line) is provided for use on one full-duplex or two half-duplex teletypewriter circuits. The AN/MGC-17 also provides 12 lines for switching telegraph transmission from other components in an area type communications system or from local subscribers. Two of the switchboard lines are equipped with VF ringers. Four additional VF ringers are provided for use as required. Trailer Mounted Gasoline Engine Generator Set PU-322/G, (two Power Units PE-75/AF) supplies the alternating-current (ac) power required to operate the AN/MGC-17.

4. Technical Characteristics

Technical characteristics of the organizational equipment are given in their respective technical manuals (app. I). Overall technical characteristics for Teletypewriter Central Office AN/MGC-17 are given below.

Teletypewriter circuits - 3 (half or full duplex).

Teletypewriter switchboard circuits. 12 (manual switching).

Intershelter communication facilities. 1.

Security circuits:

Full duplex 1.
or

Half duplex 2.

Power requirements:

Input to shelter 115 volts \pm 10%,
60 cps single
phase.

Power consumption:

Shelter lighting --- 135 watts.

Telegraph Terminals TH-5/TG. 180 watts.

Telegraph - Telephone Signal Converters. 240 watts.

Teletypewriter Re-perforator-Transmitters TT-76(*)/GGC. 300 watts.

Teletypewriter TT-4(*)/TG. 150 watts.

Security equipments 360 watts.

Blowers 248 watts.

Heater 1,500 watts.

Total 3,113 watts.

Output from PE-75/AF (part of PU-322/G). 2,500 watts.

Note. DO NOT OPERATE the heater when organizational equipments are operating. The total requirements, with all equipment operating, exceed maximum output of the power unit.

Weight:

Shelter (complete with organizational equipment). 1,400 lb.

Trailer Mounted Gasoline Generator Set PU-322/G. 2,300 lb.

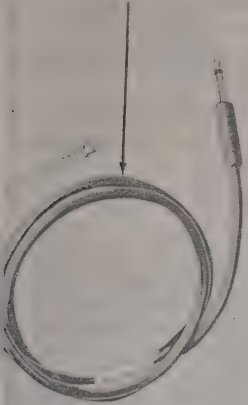
5. Components of Teletypewriter Central Office AN/MGC-17

The charts in *a* through *d* below list the components (less organizational equipment, components stored in ACCESSORIES & SPARES cabinet, and spare parts). A complete list of components is contained in publications covering the spare parts and special tools list for Teletypewriter Central Office AN/MGC-17.

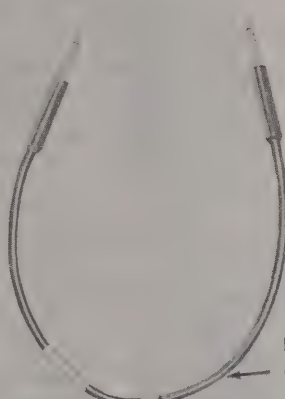
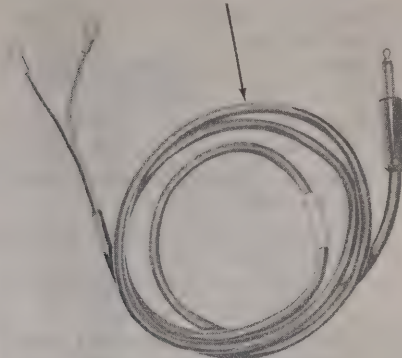
a. Main Components (Less Organizational Equipment).

Quantity	Item
1	Modified Electrical Equipment Shelter S-1 (fig. 1), complete with mountings and components (60½ in. high, 75½ in. long, 73½ in. wide, 160 cubic ft volume).
1	Trailer Mounted Gasoline Engine Generator Set PU-322/G (fig. 1) (83 in. high, 147 in. wide, 520 cubic ft volume).
2	Distribution Box J-1077/U (fig. 7).
1	Electrical Cord Assembly CX-4695/U (fig. 2).
2	Electrical Power Cable Assembly CX-4695/U (25 ft) (fig. 10).
1	Electrical Power Cable Assembly CX-4695/U (100 ft) (fig. 10).

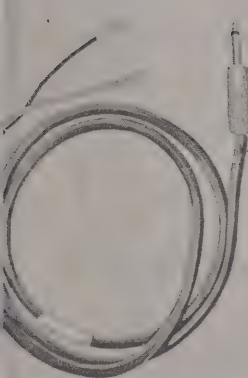
ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4766/U (4FT 8-1/4IN.)



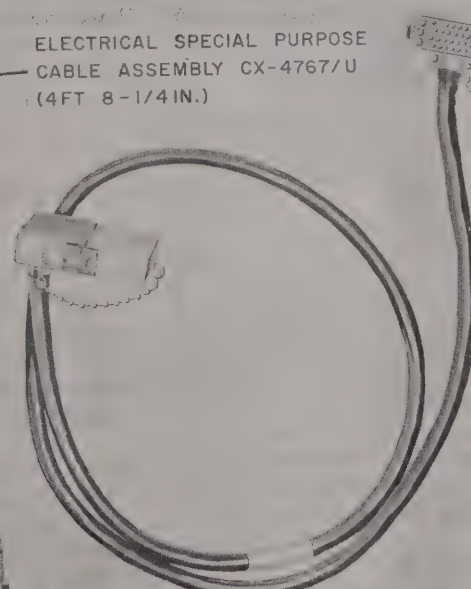
ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4764/U (7FT 8IN.)



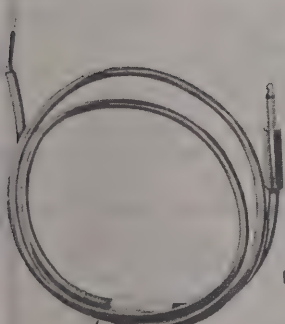
ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4768/U
(10 IN., 1 FT 4 IN., 2 FT 4 IN., 4 FT, 5 FT 6 IN.)



ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4767/U
(4FT 8-1/4IN.)

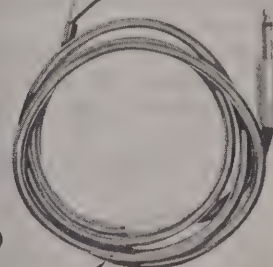


ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4876/U (5FT 5IN.)



ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4765/U (7FT 8IN.)

ELECTRICAL SPECIAL PURPOSE
CABLE ASSEMBLY CX-4765/U (7FT 8IN.)



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Figure 2. Patching and installation cords and cables.

Quantity	Item
1	Electrical Space Heater HD-375/U (fig. 8).
37	Patching cords (fig. 2):
4	Electrical Special Purpose Cable Assembly CX-4768/U (10 in.).
16	Electrical Special Purpose Cable Assembly CX-4768/U (1 ft 4 in.).
8	Electrical Special Purpose Cable Assembly CX-4768/U (2 ft 4 in.).
2	Electrical Special Purpose Cable Assembly CX-4768/U (4 ft.).
1	Electrical Special Purpose Cable Assembly CX-4768/U (5 ft 6 in.). ^a
2	Electrical Special Purpose Cable Assembly CX-4876/U (5 ft 5 in.). ^a
1	Electrical Special Purpose Cable Assembly CX-4766/U (4 ft 8¼ in.). ^a
1	Electrical Special Purpose Cable Assembly CX-4767/U (4 ft 8¼ in.). ^a
1	Electrical Special Purpose Cable Assembly CX-4764/U (7 ft 8 in.). ^a
1	Electrical Special Purpose Cable Assembly CX-4765/U (7 ft 8 in.). ^a
1	Switch Box SA-331/U (fig. 6).
2	Telephone Cable Assembly CX-4566/G (250 ft) (fig. 10).
1	Three combination, dial type, security safe (fig. 6).

^a Used for permanent connections when organizational equipment and Communication Security Equipment are installed.

b. Organizational Equipment.

Quantity	Item
2	Communication Security Equipment.*
1	Manual Telephone Switchboard SB-22/PT including two additional Line Jack Telephone Circuits TA-222/PT (less cover, Handset-Headset H-81/U, and Operator Telephone Circuit TA-221/PT).
1	Range Adapter Test Set TSEC/ST-3.
3	Telegraph Terminal TH-5/TG (less cover).
6	Telegraph-Telephone Signal Converter TA-182/U (less cover).
1	Telephone Set TA-312/PT (less carrying case).

Quantity	Item
1	Teletypewriter TT-4(*)/TG (less carrying and immersion cover).
1	Teletypewriter Reperforator-Transmitter TT(*)/GGC.
1	Teletypewriter Reperforator-Transmitter TT(*)/GGC (less chad bin assembly).
1	Tool Equipment TE-49.
2	Tool Equipment TE-33.

* Normally, two Communication Security Equipments TSEC/TA are supplied for half-duplex or full-duplex operation; however, full duplex operation only, one Teletypewriter Mixer SSM-33, Power Supply PP-1209/FG, and two Transmitter Distributors T21/FG may be supplied.

c. Components Stored in ACCESSORIES SPARES Cabinet (fig. 3).

Quantity	Item
1	Extension light
1	Ground lead
5	Power cable grip
20	26-pair cable grip
2	Shackles
1 box	Thumbtacks

d. Running Spares (fig. 4).

Quantity	Item	Location
2	Fluorescent lamp, 20 watts, 115 volts, 24 inches.	Ceiling
1	Incandescent lamp (extension light), 50 watts, 115 volts.	ACCESSORIES & SPARES cabinet.
1	Shelter neon lamp, 3-watt, 105-120 volts.	ACCESSORIES & SPARES cabinet.
3	POWER DISTRIBUTION PANEL neon lamp, 1.4 watt, 105-120 volts.	ACCESSORIES & SPARES cabinet.
3	Fluorescent starter	Ceiling
1	Flashlight incandescent lamp	Flashlight

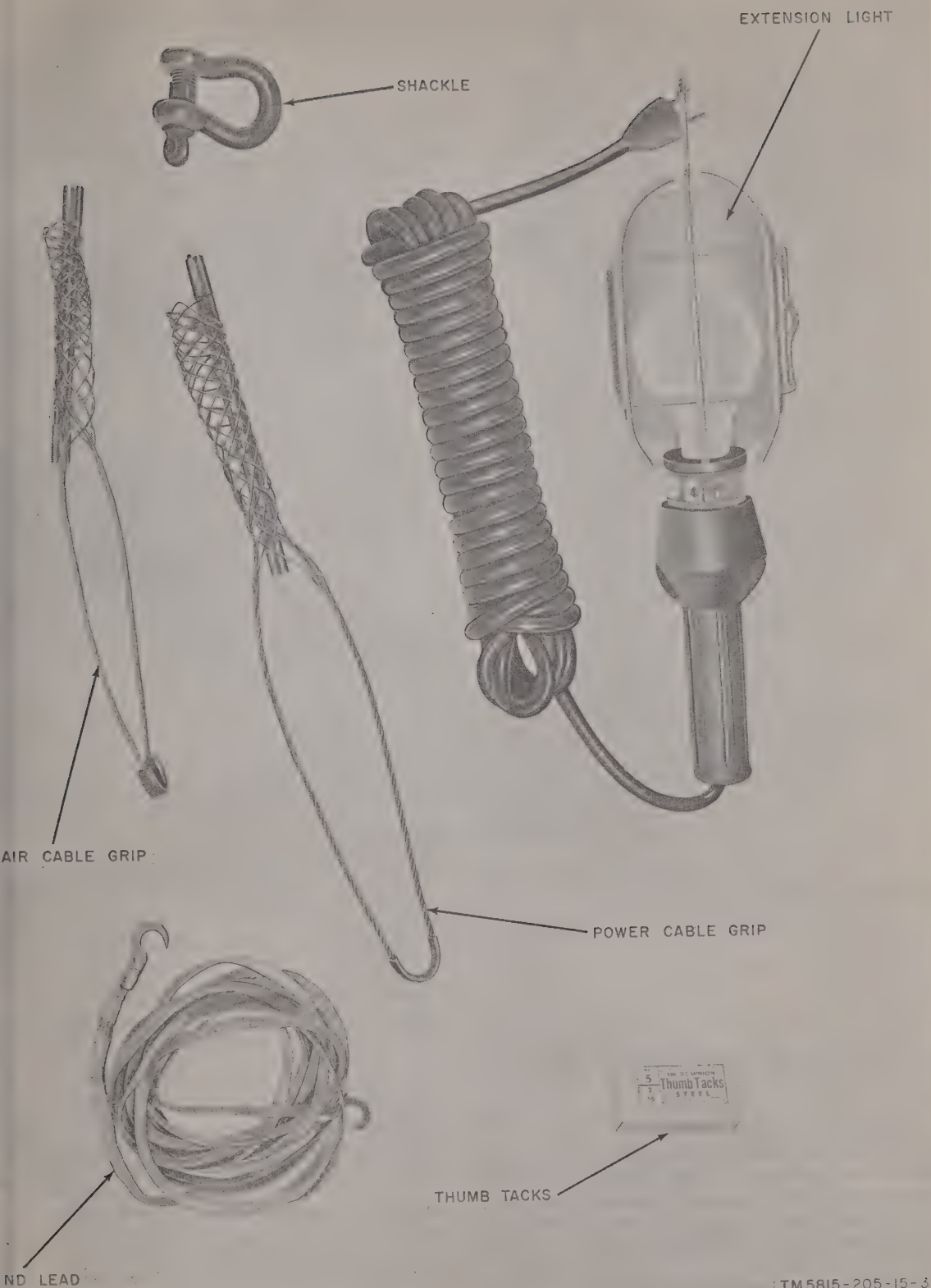
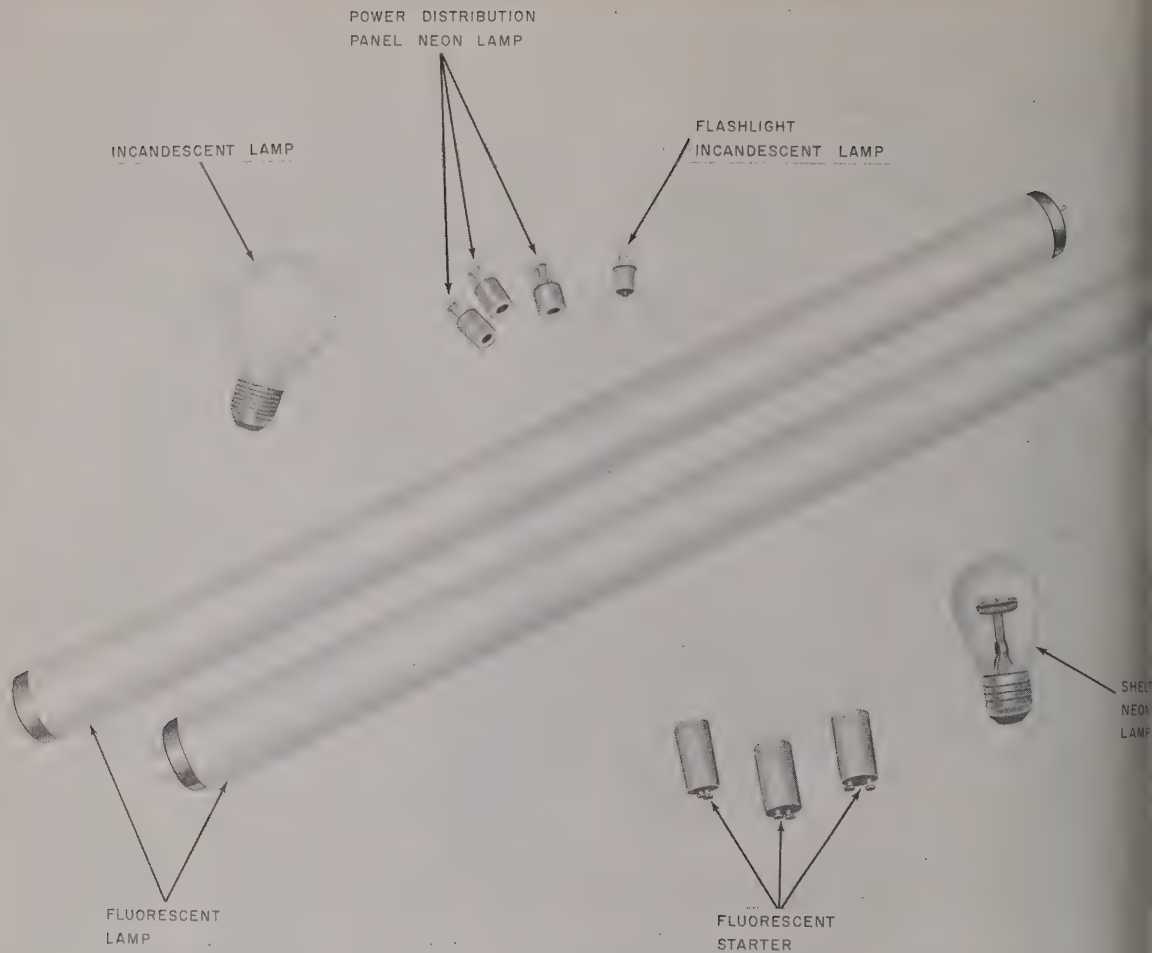


Figure 3. Miscellaneous components stored in ACCESSORIES & SPARES cabinet.



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Figure 4. Running spares.

6. Common Names

Components of Teletypewriter Central Office AN/MGC-17 to which common names have been assigned are listed below:

Component	Common name
Cable Reel RC-435/U	Cable reel
Connector Adapter UG-1312/U	Junction box
Distribution Box J-1077/U	Drop line box
Electrical Connector Plug U-185/G	26-pair connector
Electrical Connector Receptacle U-186/G	26-pair receptacle
Electrical Cord Assembly CX-4695/U (6 ft)	Telephone cord
Electrical Power Cable Assembly CX-4693/U (25 ft)	Power stub
Electrical Power Cable Assembly CX-4694/U (100 ft)	Power cable
Electrical Space Heater HD-375/U	Heater
Ground Rod MX-148/G	Ground rod
Manual Telephone Switchboard SB-22/PT:	Switchboard
Line Jack Telephone Circuit TA-222/PT	Line pack
Accessory Kit MX-230/PT	Accessory kit

Component	Common name
Electrical Equipment Shelter S-144/G	Shelter
apter Test Set TSEC/ST-3	Test set
box SA-331/U	Switch box
-Telephone Signal Converter TA-182/U	VF ringer
-Line Control C-2894/TG	Line unit
Cable Assembly CX-4566/G (250 ft)	26-pair cable
Set TA-312/PT	Telephone set
mounted Gasoline Engine Generator Set PU-322/G:	Generator set
r Unit PE-75/AF	Power unit
n 2-wheel Cargo Trailer M101	Trailer

Description of Teletypewriter Central Office N/MGC-17 fig. 1)

N/MGC-17 is a self-contained, shelter-
teletypewriter central office with a
source. It is usually furnished to the
organization less the organizational
ent. The main components of the
C-17 are listed in paragraph 5 and
own in figures 6 through 10. Components
N/MGC-17 which are the same as com-
of the other shelter-housed facilities
division signal personnel in an area
communications system are described in
5805-204-15.

Simplified Electrical Equipment Shelter S-144/G fig. 5)

lightweight shelter is adapted for both
and helicopter transportation. It is fully
d, watertight, and airtight. The left
ht sides of the shelter are recessed to
clearance for the wheel wells of the
Two exhaust blower vents with hinged
are located on the outside front wall.
are bolted to the bottom of the shelter.
ry D-rings on the left and right sides
used for tying equipment to the shelter.
ection door at the rear of the shelter
entrance when truck-mounted and the
e is up.

Left Wall (fig. 6). The teletypewriter equip-
mounted on equipment racks next to the
ll. The Communication Security Equip-
mounted on sliding shelves. The NIGHT
I BATTERY box contains the batteries
y mounted in the rear of the SB-22/PT.

The ACCESSORIES & SPARES cabinet is for
storing miscellaneous and loose components. A
patching panel is for connecting organizational
equipment. Two folding chairs (not shown)
are stored in front of the TT-4(*)/TG during
transit. A switch box, used to transfer from
one power source to another, is mounted next
to the left wall. The TG-5/TG switches and
indicating lamps are mounted in the ac power
duct. When not in use, the cable reel holders
are stored above the switch box on the left
wall.

b. Right Wall (fig. 7). A tackboard is
mounted on the right wall. A manual holder,
fire extinguisher, and first aid kit are mounted
on the tackboard. The message box in the wall
permits the exchange of messages without
opening the door of the shelter. A TA-312/PT
and a TSEC/ST-3 are mounted on the tack-
board. When not in use, the ground rod is
stored in front of the tackboard. Six TA-
182/U's and two drop line boxes are mounted
on the right wall towards the front of the
shelter.

c. Front Wall (fig. 8). Two blowers are
mounted on the front wall. The TA-182/U re-
ceptacles, indicating lamps, and switches are
mounted in the ac power duct. The JACK &
BINDING POST panel is for intershelter com-
munication.

d. Rear Wall (fig. 9). The SIGNAL &
POWER ENTRANCE box and SIGNAL
BINDING POSTS box are mounted in the rear
wall. Two junction boxes, for the interconnec-
tion of power cables and power stubs, are stored
on the door. The door is equipped with an air
vent with an air filter. An observation window
in the door enables the occupants of the shelter

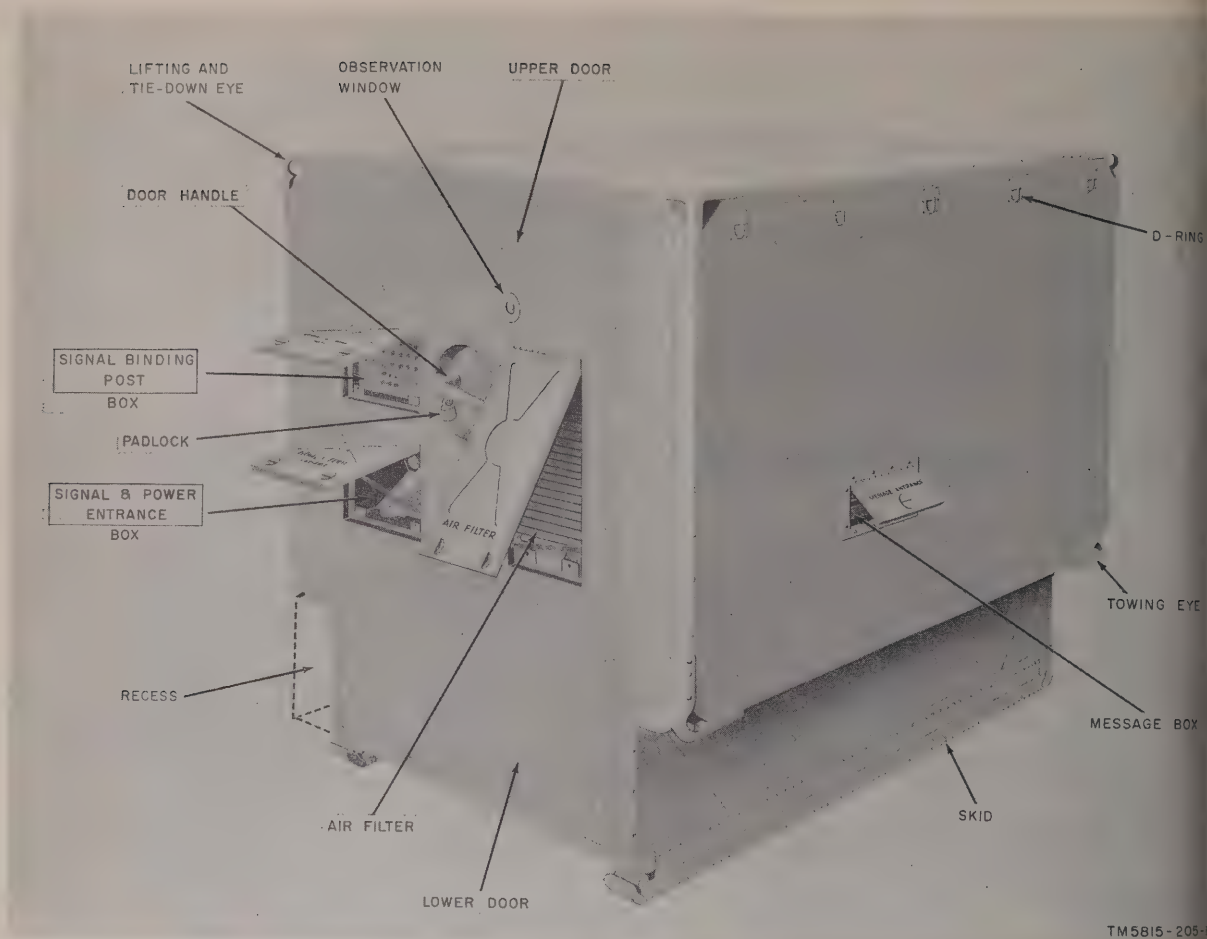


Figure 5. Modified Electrical Equipment Shelter S-144/G.

to identify callers without opening the door. The switches that control the shelter lighting are in the ac power duct on the rear wall.

e. *Floor* (fig. 10). Storage mountings are provided on the floor for the switchbox, heater, and Tool Equipment TE-49. Recessed cable reel mountings are used to retain cable reels when the shelter is in transit. The ladder is attached to the reels by webbing straps.

f. *Lighting*. Four 20-watt fluorescent lamps provide the general lighting for the shelter. A neon lamp (fig. 9) is next to the door. The NEON, NORMAL-BLACKOUT, and FLUORESCENT switches are mounted near the door. With the NORMAL-BLACKOUT switch in the BLACKOUT position, the shelter lights (through the operation of the microswitch) will go out when the door is opened.

g. *Power and Wiring*. The external ac power

source is connected to the shelter at the SIGNAL & POWER ENTRANCE box (fig. 1) and is distributed to the individual circuits through the POWER DISTRIBUTION PANEL (fig. 13). The teletypewriter and telephone circuits are connected to the shelter at the SIGNAL & POWER ENTRANCE box or the SIGNAL BINDING POSTS box (fig. 11) and are routed through the signal duct (fig. 6) to the patching panel (fig. 14) and to the switchboard. All the interior shelter wiring and cabling is contained in metal ducts which are equipped with removable covers. The ac power outlets in the shelter are all twist-lock receptacles.

9. Trailer Mounted Gasoline Engine Generator Set PU-322/G (fig. 1)

The generator set supplies the ac power m

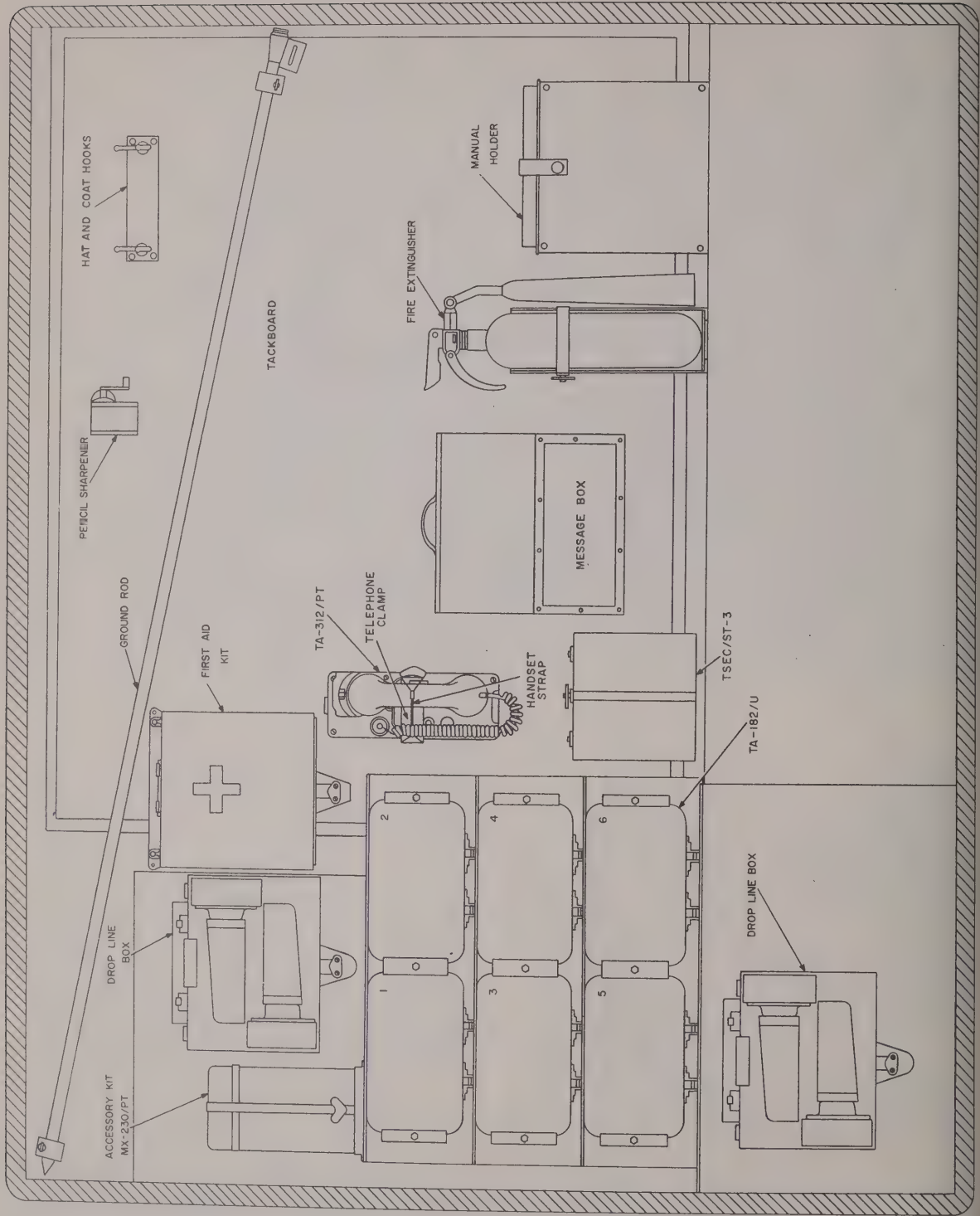
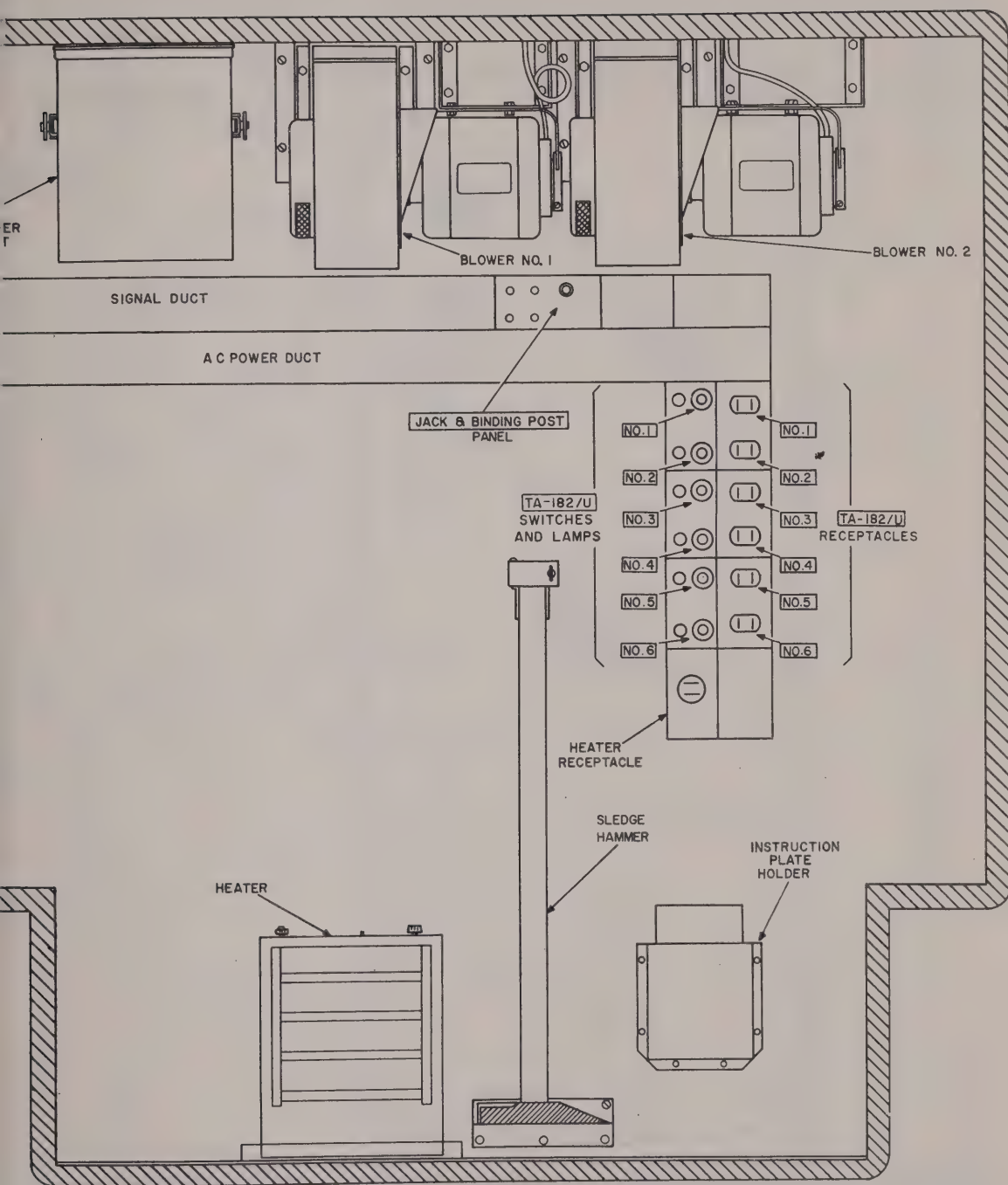


Figure 7. Shelter, right wall.



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Figure 8. Shelter, front wall.

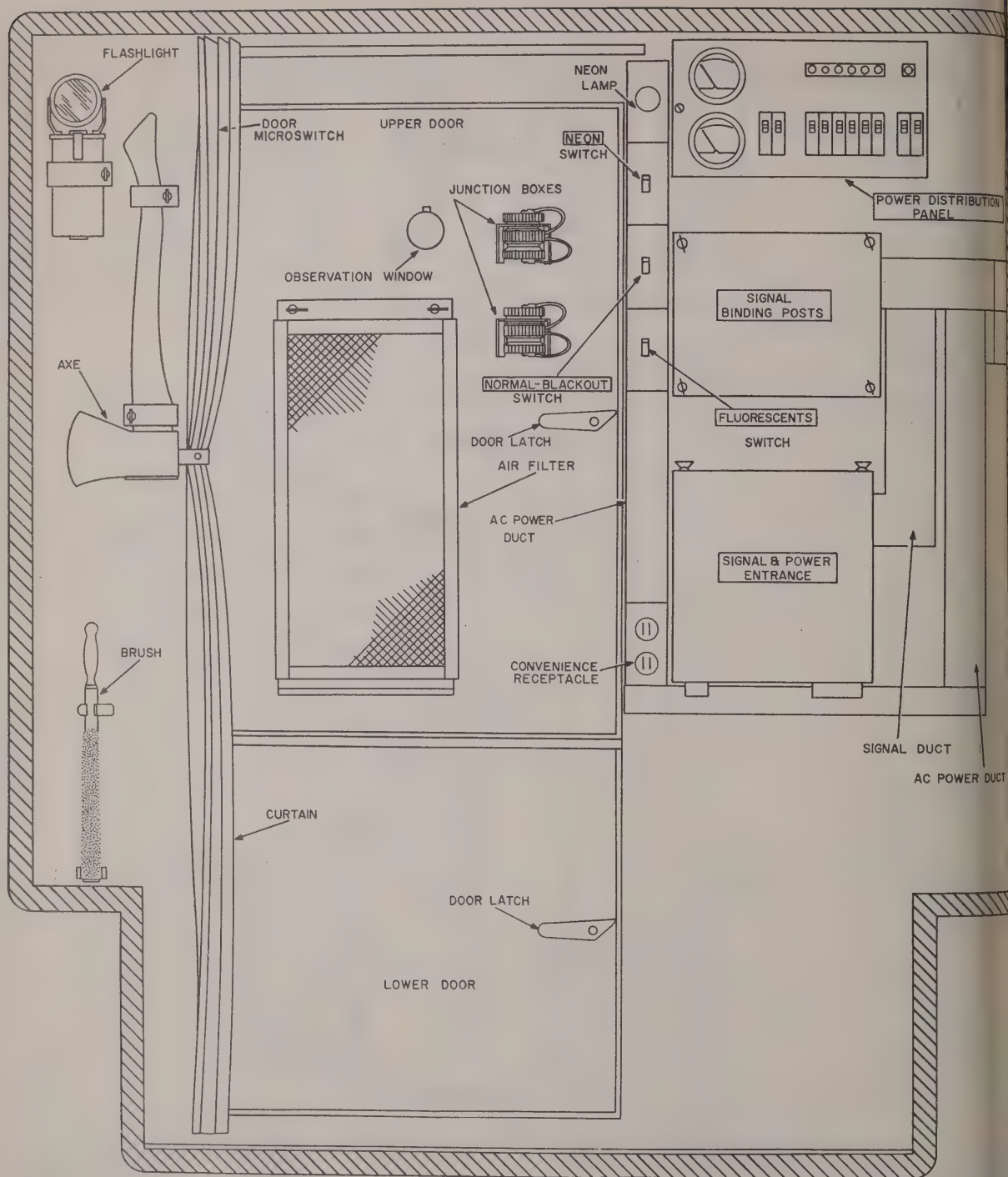
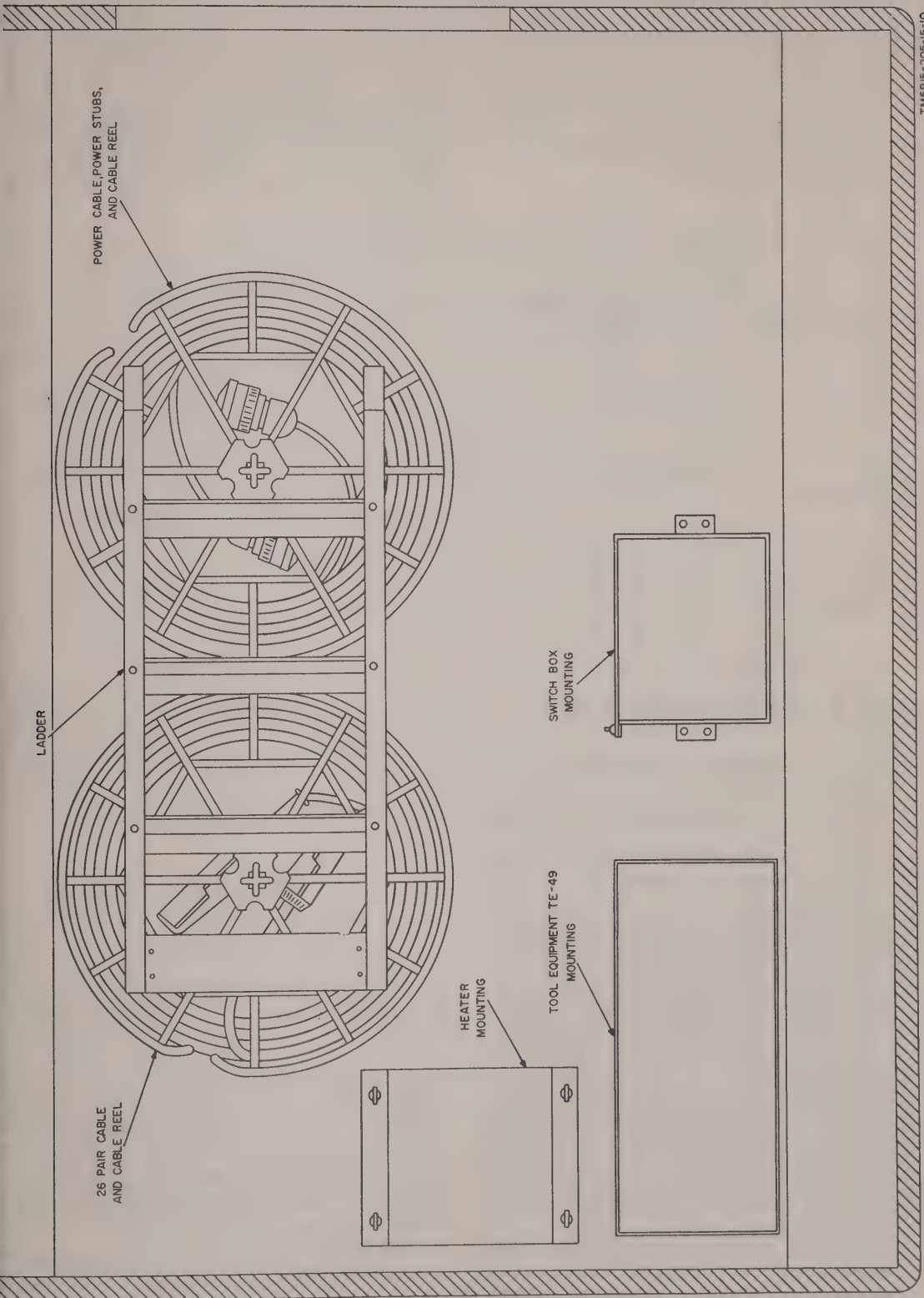


Figure 9. Shelter, rear wall.

TM5815-205-1



TM5815-205-15-10

Figure 10. Shelter, floor plan.

essary to operate the AN/MGC-17. The generator set consists of two Power Units PE-75-AF mounted in a 3/4-ton, 2-wheel, Cargo Trailer M101. Each power unit has an output of 2,500 watts, single-phase, 60-cycle per second (cps), 120-volt alternating current. A complete description of the generator set is included in TM 11-5805-204-15.

10. SIGNAL BINDING POST Box
(fig. 11)

The SIGNAL BINDING POSTS box contains 21 pairs of binding posts which connect to the switchboard, VF ringers, patching panel and JACK & BINDING POST panel. Except for pairs A and B, the binding posts are in parallel with the contacts of the 26-pair receptacle. The connections are listed in the chart below:

SIGNAL BINDING POSTS box pair No.	SIGNAL & POWER ENTRANCE box SIGNAL 1 receptacle pair No.	Equipment connection	
		Equipment	Binding post
1 through 10	1 through 10	Switchboard	LINE 1 through 10
11	11	TA-182/U 5	LINE 4WS 2W
12	12	TA-182/U 6	LINE 4WS 2W
13 through 18	13 through 18	Patching panel	LINE 13 through 18
19 through 25 (spare)			
LB PHONE	26	JACK & BINDING PCST PANEL.	LB PHONE
BINDING POSTS A	No connection	JACK & BINDING PCST PANEL.	A
BINDING POSTS B	No connection	JACK & BINDING PCST PANEL.	B

11. SIGNAL & POWER ENTRANCE Box
(fig. 12)

The SIGNAL & POWER ENTRANCE box contains a 26-pair cable receptacle, (SIGNAL 1), two 115-volt ac power receptacles (POWER IN and POWER OUT), a convenience receptacle (115 VAC), ground lug, and a door-buzzer pushbutton. The SIGNAL 1 receptacle provides connections for circuits between the AN/MGC-17 and the SB-611/MRC. The incoming power to the shelter from the switchbox mounted in the generator set is connected to the POWER IN receptacle. The POWER OUT receptacle can be used to supply power to a second shelter if the output (2,500 watts) of the generator set is not exceeded. A ground lug with a wingnut provides facilities for connecting a ground to the shelter and the equipment. The pushbutton operates the door buzzer to provide an audible signal when the shelter door is locked.

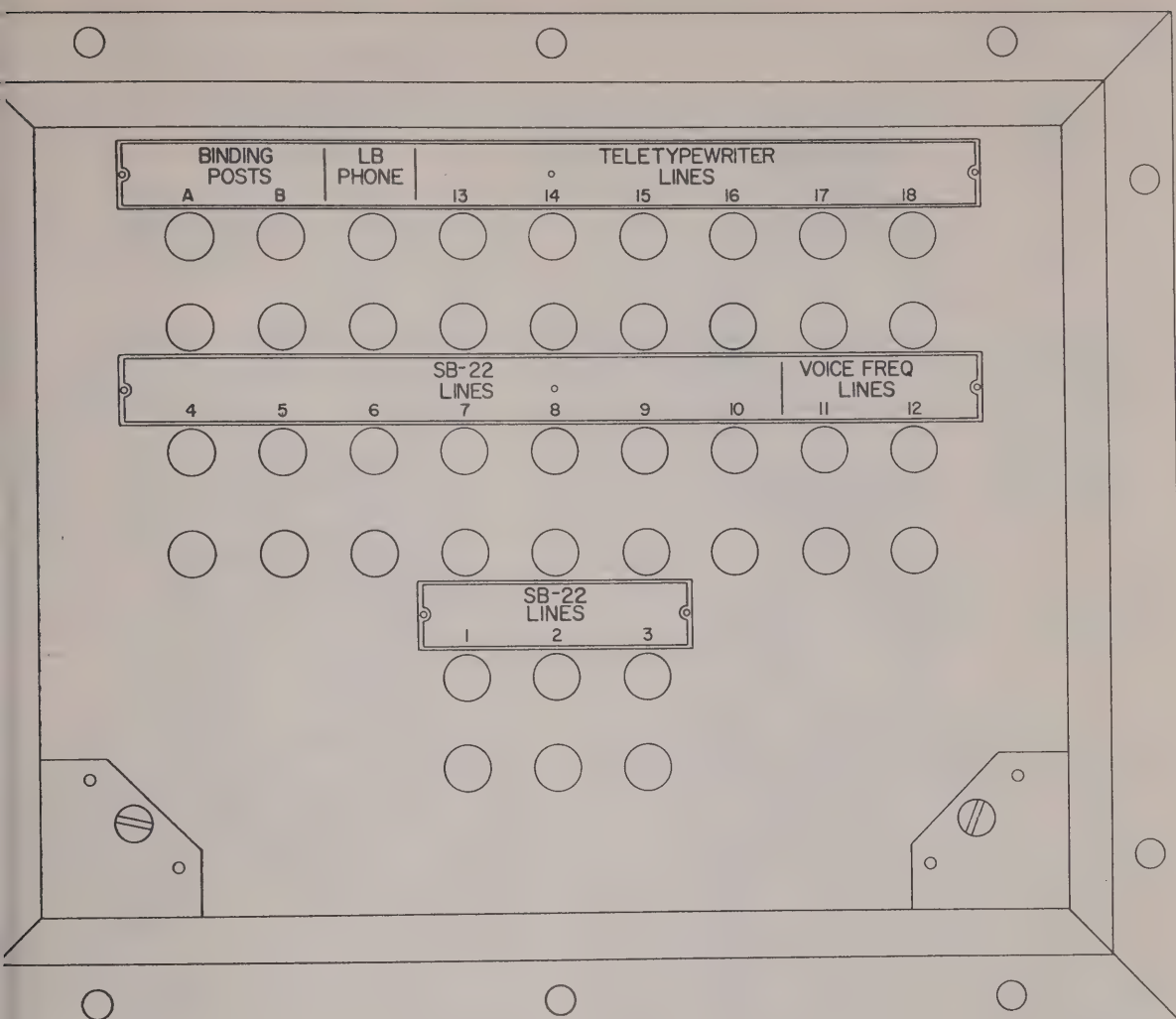
12. Distribution Box J-1077/U
(fig. 7)

When not in use, two dropline boxes are

mounted on the right wall of the shelter above and below the TA-182/U's. The dropline boxes are used for testing, as wireheads, and to drop extension circuits from a 26-pair cable. A complete description is included in TM 11-5805-204-15.

13. POWER DISTRIBUTION PANEL
(figs. 9 and 13)

The POWER DISTRIBUTION PANEL is mounted on the rear wall directly above the SIGNAL BINDING POSTS box. It is used to control and distribute the ac power supplied to the shelter. Mounted in the panel is an ac ammeter with a full-scale deflection of 50 amperes, a current transformer (not shown), a voltmeter with a 0-150 volts scale, a MAIN circuit breaker rated at 50 amperes, and individual 1 ampere circuit breakers with indicating lamps. The individual circuit breakers control the LIGHTS, OPR POS, BLOWER 1, BLOWER 2, CONVENIENCE RECEPTACLE, and HEATER. A 22 ampere OVERLOAD circuit breaker protects the power unit.



TM5815-205-15-11

Figure 11. SIGNAL BINDING POSTS box.

Telegraph Line Control C-2894/TG (fig. 6)

Three line units are used to change the mode of the TH-5/TG's from two-wire operation to four-wire half-duplex (with home copy), to four-wire full duplex (without home copy), or two-wire speech-plus-half-duplex operation (with home copy). A line unit is installed on the front panel of each TH-5/TG. A complete description of the line unit is included in TM 11-5805-204-15.

Patching Panel (fig. 14)

The patching panel, containing three rows of binding posts, is mounted directly below three TH-5/TG's

on the left wall of the shelter. The bottom row of jacks is recessed, and is used to permanently connect the cords and plugs of the TH-5/TG's, TT-76(*)/GGC's, and TT-4(*)/TG into the system. The permanently connected cords and plugs are protected by a hinged cover. The two upper rows of jacks are used for patching interconnections between the TH-5/TG's, TA-182/U's, TT-76(*)/GGC's, TT-4(*)/TG, Communication Security Equipment, and SB-22/PT.

16. Electrical Space Heater HD-375/U (figs. 8 and 10)

The heater is mounted on the floor near the front wall. A switch permits the heating element

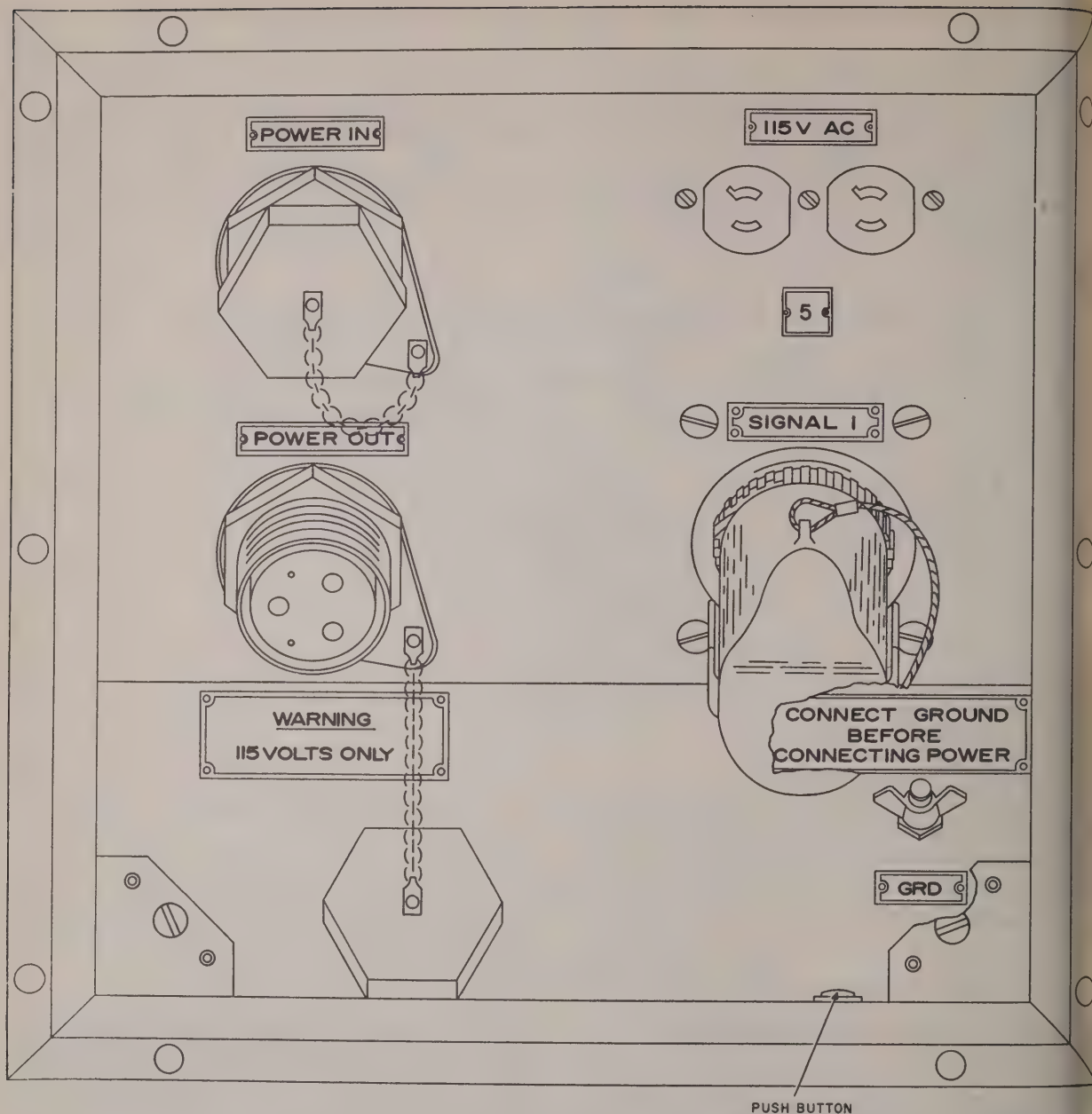


Figure 12. SIGNAL & POWER ENTRANCE box.

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ment and fan to be operated together or the fan to operate alone. A complete description of the heater is included in TM 11-5805-204-15.

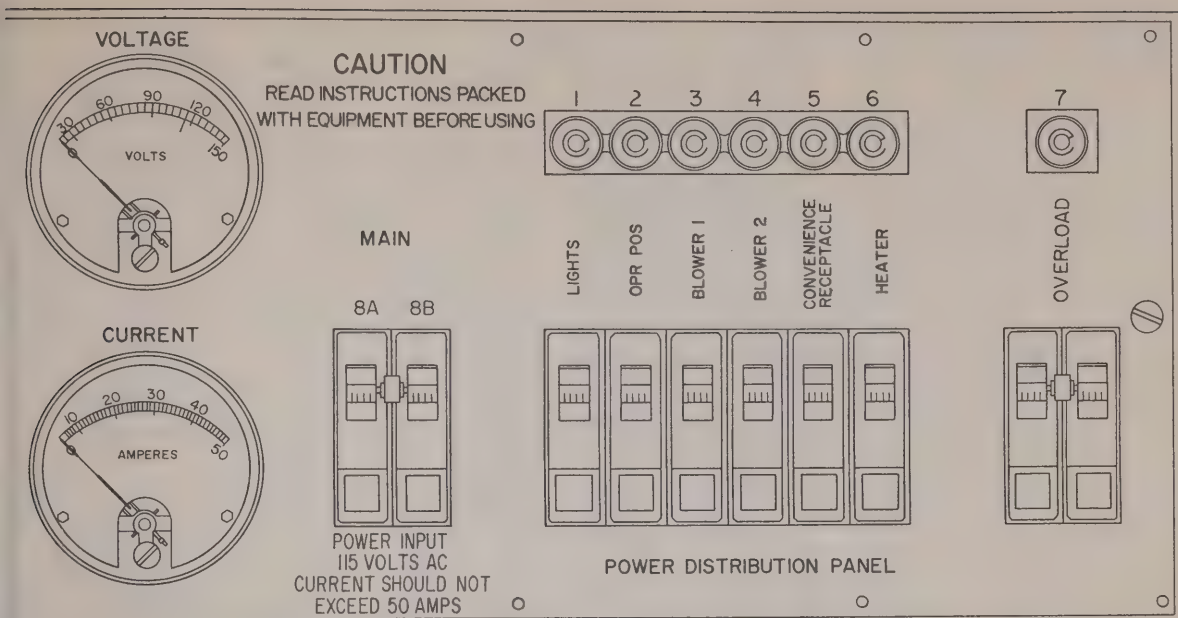
17. JACK & BINDING POST Panel (fig. 8)

The JACK & BINDING POST panel is mounted in the signal duct on the front wall. Two pairs of binding posts (A and B) and a jack (LB PHONE) are mounted on the panel.

The binding posts are connected to the A and B binding posts in the SIGNAL BINDING POSTS box. The LB PHONE jack is connected in parallel with the LB PHONE pair of binding posts in the SIGNAL BINDING POSTS box and with pair 26 of the SIGNAL 1 receptacle in the SIGNAL & POWER ENTRANCE box.

18. Control Box (fig. 15)

The control box contains the three neon lamp



TM5815-205-15-13

Figure 13. POWER DISTRIBUTION PANEL.

red from the TH-5/TG's and two push-
n switches. The neon lamps, extensions
the send lamp sockets of each TH-5/TG,
te when a TH-5/TG is in the send condi-
The pushbutton switches permit the send-
plain text when on-line Communication
ity Equipment is installed. The control
mounted on the left wall (fig. 6) in sight
within easy reach of the operator.

afe
(fig. 6)

e safe is mounted under the Communica-
security Equipment mounting shelf. It is
o store classified material and has a three-
nation lock and a thumb latch.

ords and Cables
(fig. 2)

Electrical Special Purpose Cable Assembly
CX-4768/U. This cable assembly is a flexible,
onductor cord used to patch teletypewriter
ts, equipped with a black telephone plug
h end. It is provided in the AN/MGC-17
gths of 10 inch, 1 foot 4 inches, 2 feet 4
s, 4 feet, and 5 feet 6 inches.

Electrical Cord Assembly CX-4695/U (6
This cord assembly is a flexible, two-con-
r cord used to connect the telephone set

to the JACK & BINDING POST panel. It is
equipped with a black telephone plug at one
end and prepared leads at the other end.

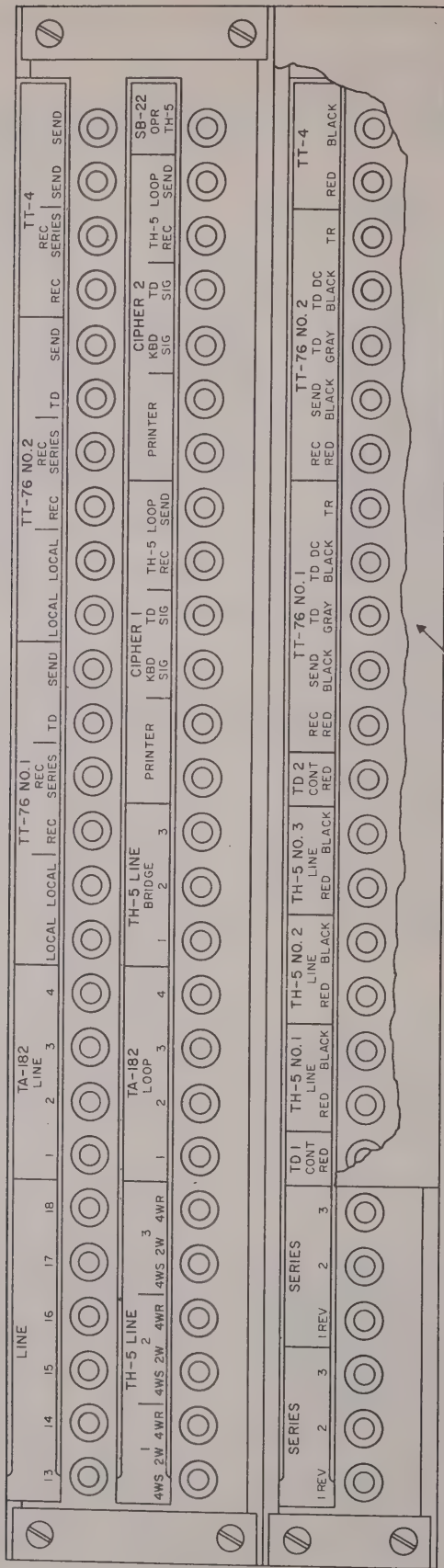
c. Electrical Special Purpose Cable Assembly
CX-4766/U (4 ft 8 1/4 in.). This cable assembly
is a flexible two-conductor cord equipped at one
end with a black telephone plug and at the other
end with spade terminals. It permanently con-
nects the TT-4(*)/TG to the TT-4 BLACK
jack in the patching panel.

d. Electrical Special Purpose Cable Assembly
CX-4767/U (4 ft 8 1/4 in.). This cable assembly
is the same as the CX-4766/U (*c* above) except
it has a red telephone plug and connects to the
TT-4 RED jack in the patching panel.

e. Electrical Special Purpose Cable Assembly
CX-4764/U (7 ft 3 in.). This cable assembly is
a flexible two-conductor cord equipped at one
end with a black telephone plug and at the other
end with ring terminals. It permanently con-
nects the TT-76(*)/GGC to the TD DC BLACK
jack on the patching panel.

f. Electrical Special Purpose Cable Assembly
CX-4765/U (7 ft 8 in.). This cable assembly
is the same as the CX-4764/U (*e* above) except
it has a red telephone plug and connects to the
TD CONTROL RED jack in the patching panel.

g. Electrical Special Purpose Cable Assembly



TM5815-205-15-14

HINGED COVER

Figure 1k. Patching panel.

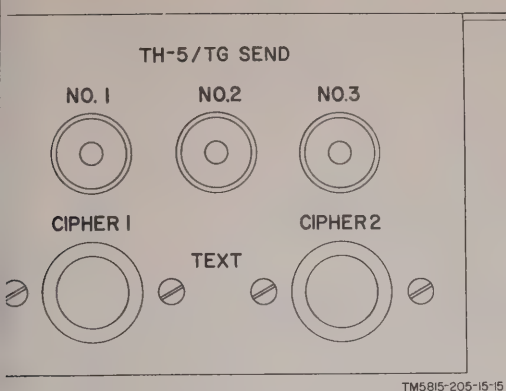


Figure 15. Control box.

76/U (5 ft 5 in.). This cable assembly is a 11-conductor cable used to connect the equipment to the CIPHER 1 and CIPHER 2 receptacles in the signal duct. It is equipped with 32-pin plug connectors and dummy receptacles. The dummy receptacles are on the connectors to protect the pins when the CX-A876/U is in storage.

Organizational Equipment

Manual Telephone Switchboard SB-22/PT (TM 11-2202). The switchboard is mounted on the left wall (fig. 6) and is used to switch frequency teletypewriter circuits. The operator's pack is removed and five additional lines are added, four of which are spares. Line 17 is connected to the SB-22 OPR TH-5/TG patching panel and is used as the operator's rack for answering switchboard calls. The switchboard provides 12 teletypewriter lines; the lines are equipped with VF ringers.

Teletypewriter Reperforator-Transmitter TT-4(*)/GGC (TM 11-2225). The two TT-4(*)/GGC's are mounted on shelves, one above the other, on the left wall (fig. 6). They provide facilities for manual transmission directly on a keyboard, and for tape transmission on a transmitter-distributor. The transmitter-distributor must be modified for security transmission (par. 26a). Received messages are read and perforated on 7/8-inch paper tape.

Teletypewriter TT-4(*)/TG (TM 11-206-12). The TT-4(*)/TG is mounted on the left of the TT-76(*)/GGC's (fig. 6). It is a standard communication page-printing tele-

typewriter used to transmit, monitor, and receive messages. It is used primarily with the SB-22/PT.

d. Telegraph Terminal TH-5/TG (TM 11-2239). Three TH-5/TG's are mounted in a rack above the TT-4(*)/TG (fig. 6). They are used for voice-frequency teletypewriter operation. The TH-5/TG is a frequency-shift (fs) carrier modulator and demodulator. It modulates and demodulates 20-milliampere (ma) direct-current (dc) teletypewriter pulses to 1,325 cps (mark) and 1,225 cps (space). It also provides for transmitting and receiving a 20-cps frequency for signaling and breaking purposes.

e. Telegraph-Telephone Signal Converter TA-182/U (TM 11-2137). Six VF ringers are mounted in a rack on the right wall (fig. 7). They provide for signaling in circuits which will not pass 20 cps ringing signals.

f. Communication Security Equipment TSEC/KW-9 (KAM-10/TSEC and KAO-33/TSEC). Provisions are made for mounting two TSEC/KW-9's in a rack located below the switchboard (fig. 6). A complete description of the TSEC/KW-9 is included in KAM-10/TSEC. Operating instructions are included in KAO-33/TSEC.

g. Range Adapter Test Set TSEC/ST-3. The TSEC/ST-3 is a test set used in the installation and maintenance of the TSEC/KW-9's. It is mounted on the right wall of the shelter (fig. 7). A complete description and instructions for the test set are included in KAM-10/TSEC.

h. Teletypewriter Mixer SSM-33 and Transmitter Distributor TT-21/FG. This Communication Security Equipment is not standard in the AN/MGC-17 and will be used only as a secondary system replacing the TSEC/KW-9.

i. Telephone Set TA-312/PT (TM 11-2155). The telephone set (less carrying case) is mounted on the right wall (fig. 7). It is arranged for local battery manual telephone operation and is used for unclassified communication between shelters.

j. Tool Equipments (fig. 6). Tool Equipment TE-33 is stored in the ACCESSORIES & SPARES cabinet. Tool Equipment TE-49 is stored on the floor near the left and front walls. The tool equipments are used for installation and maintenance of the AN/MGC-17.

CHAPTER 2

INSTALLATION AND OPERATION

Section I. INSTALLATION AND INTERCONNECTION OF ORGANIZATIONAL EQUIPMENT

22. Procedures

Usually, the shelter is received without the organizational equipment (par. 5b) installed. To install the organizational equipment, the installation team will follow the procedures given in *a* through *l* below.

Note. If the shelter is received with the organizational equipment installed, unpack and check the equipment (par. 23), perform the preoperational procedures (pars. 38-43), make the necessary signal connections (pars. 44-46), and operate the equipment (pars. 47-53).

- a.* Unpack and check the equipment (par. 23).
- b.* Install the switchboard (par. 24).
- c.* Install the TH-5/TG (par. 25).
- d.* Install the TT-76(*)/GGC (par. 26).
- e.* Install the TT-4(*)/TG (par. 27).
- f.* Install the TSEC/KW-9 (par. 28) or the SSM-33 and TT-21/FG (par. 33).
- g.* Install the VF ringers (par. 29).
- h.* Install the telephone set (par. 30).
- i.* Install the tool equipments (par. 31).
- j.* Install the test set (par. 32).
- k.* Interconnect the installed equipment (par. 34).
- l.* Perform the organizational equipment installations test (pars. 35-37).

23. Unpacking and Checking

Note. When packed for shipment, the shelter of Teletypewriter Central Office AN/MGC-17 is placed in a crate. Shelter uncrating instructions are included in TM 11-5805-204-15.

a. Removing Contents. When preparing the shelter for checking the equipment, proceed as follows:

- (1) Unlock and open the shelter door.
- (2) Unfasten the four web straps which secure the ladder to the cable reels (fig. 10).

- (3) Remove the ladder from the shelter and place it on the ground or against the tail gate of the truck.
- (4) Unscrew the cable reel holders which secure the cable reels to the floor and place them in their mountings (fig. 6).
- (5) Remove the cable reels from the shelter.

b. Checking Contents. Check the contents of the shelter against the list of identifiable components which is contained in the manual holder (fig. 7). When the component list is not available, the table of components (par. 5) may be used as a general check to indicate the equipment which *probably* was packed.

c. Unpacking and Checking Organizational Equipment. To unpack and check organizational equipments, refer to the appropriate technical manuals (app. I).

24. Installation of Manual Telephone Switchboard SB-22/PT (fig. 6)

The switchboard is secured in its mounting on the left wall. A battery box, mounted below the switchboard mounting, is substituted for the normally used battery compartment in the rear of the switchboard. Connecting cables are long enough to allow the removal of switchboard from the mounting for connection, repairs, troubleshooting.

a. Connections.

- (1) Place the switchboard in a convenient place under the switchboard mounting with the front facing the left wall and with the rear door hinge at the bottom.
- (2) Open the rear door.
- (3) Feed the cable (from the signal duct)

designated SB-22/PT through the wire entry nearest pair 17 binding posts of the switchboard. The wire leads are paired and num-

bered 1 through 12, 17, NA, and GRD. Connect the wires to the switchboard binding posts as indicated in the chart below:

Binding post air No.	SB-22/PT cable			
	Upper binding post		Lower binding post	
	Wire No.	Color	Wire No.	Color
1	1	White	1	Yellow
2	2	White	2	Orange
3	3	White	3	Black
4	4	White	4	Pink
5	5	White	5	Light brown
6	6	White	6	Dark brown
7	7	White	7	Silver
8	8	White	8	Dark green
9	9	White	9	Light green
10	10	White	10	Violet
11	11	White	11	Slate
12	12	White	12	Light blue
17	13	Brown	13	Black
NA	NA	Violet		
ND			17	Black

Close the rear door.

Installation.

Turn the SB-22/PT around and remove the cover.

Lift and insert the SB-22/PT into its mounting.

Engage the snap catches of the mounting in the D-rings on the underside of the SB-22/PT and secure the snap catches.

Remove the operator's pack from the SB-22/PT.

Remove the three line packs from the accessory kit. Obtain two additional line packs. Install the five line packs in the switchboard.

The accessory kit may be supplied in either a canvas case or a metal box. Store as described in (a) or (b) below.

(a) Place Accessory Kit MX-230/PT (canvas case) in the ACCESSORIES & SPARES cabinet.

(b) Place Accessory Kit MX-230A/PT (metal box) in the mounting on the right wall (fig. 7) and secure with metal strap and fastener.

- (7) Install two Batteries BA-30 in the NIGHT ALARM BATTERY box as follows:
 - (a) Open the cover of the battery box.
 - (b) Insert the left battery with its center terminal at the top against the spring; insert the right battery with the center terminal at the bottom against the positive (+) binding post.
 - (c) Close and fasten the cover.

25. Installation of Telegraph Terminal TH-5/TG

Before installing the TH-5/TG's in the AN/MGC-17, install a line unit on each TH-5/TG. Refer to TM 11-5805-204-15 for line unit installation and connection instructions.

- a. Installation.* Install the three TH-5/TG's as follows:
- (1) Remove the cover from each TH-5/TG.
 - (2) Remove the fuses from each cover and place them in the fuse holder on the left wall (fig. 6).
 - (3) Remove a set of instruction plates from inside one of the covers and place

them in the instruction plate holder on the front wall (fig. 8).

- (4) Remove the cable clamps, locking nuts, retaining end, and center brackets from the threaded rods on the TH-5/TG mounting rack (fig. 6). Also, remove the nuts which help secure the brackets on the rods before the TH-5/TG's are installed.
- (5) Place TH-5/TG NO. 1 in the rack (fig. 6) and connect the lamp (E9) socket to wires from the signal duct (*b*(1) below). Replace the retaining end bracket on the rod. Position the bracket over the left edge of the TH-5/TG. Replace the locking nut fingertight.
- (6) Place TH-5/TG NO. 2 in the rack and connect the lamp (E9) socket to the wires from the signal duct (*b*(1) below). Position the center bracket over the adjacent edges of TH-5/TG's NO. 1 and NO. 2. Replace the locking nut fingertight.
- (7) Place TH-5/TG NO. 3 in the rack and connect the lamp (E9) socket to the wires from the signal duct (*b*(1) below). Position the remaining center bracket over the adjacent edges of TH-5/TG NO. 2 and NO. 3 and position the end bracket over the right edge of TH-5/TG NO. 3. Replace the locking nuts fingertight.
- (8) Use a wrench to tighten all four locking nuts; do not overtighten.
- (9) Replace the cable clamps.
- (10) Remove the lamp caps from the TH-5/TG's and place them in the ACCESSORIES & SPARES cabinet.
- (11) Remove the neon lamps from the TH-5/TG's and place them in the lamp sockets on the control box (fig. 15).

b. Connections. Connect the TH-5/TG as follows:

- (1) Connect the cable (from the signal

duct) designated TH-5/TG to each TH-5/TG lamp (E9) socket. The wire leads with pairs designated NO. 1, NO. 2, and NO. 3 connect to NO. 1, NO. 2, NO. 3, respectively.

- (2) Connect the cords (from the line unit) to the patching panel as described in paragraph 34a.
- (3) Connect the power cords to the TH-5/TG NO. 1, TH-5/TG NO. 2, and TH-5/TG NO. 3 receptacles in the power duct (fig. 6) and arrange the power cords neatly, use the cable clamps.

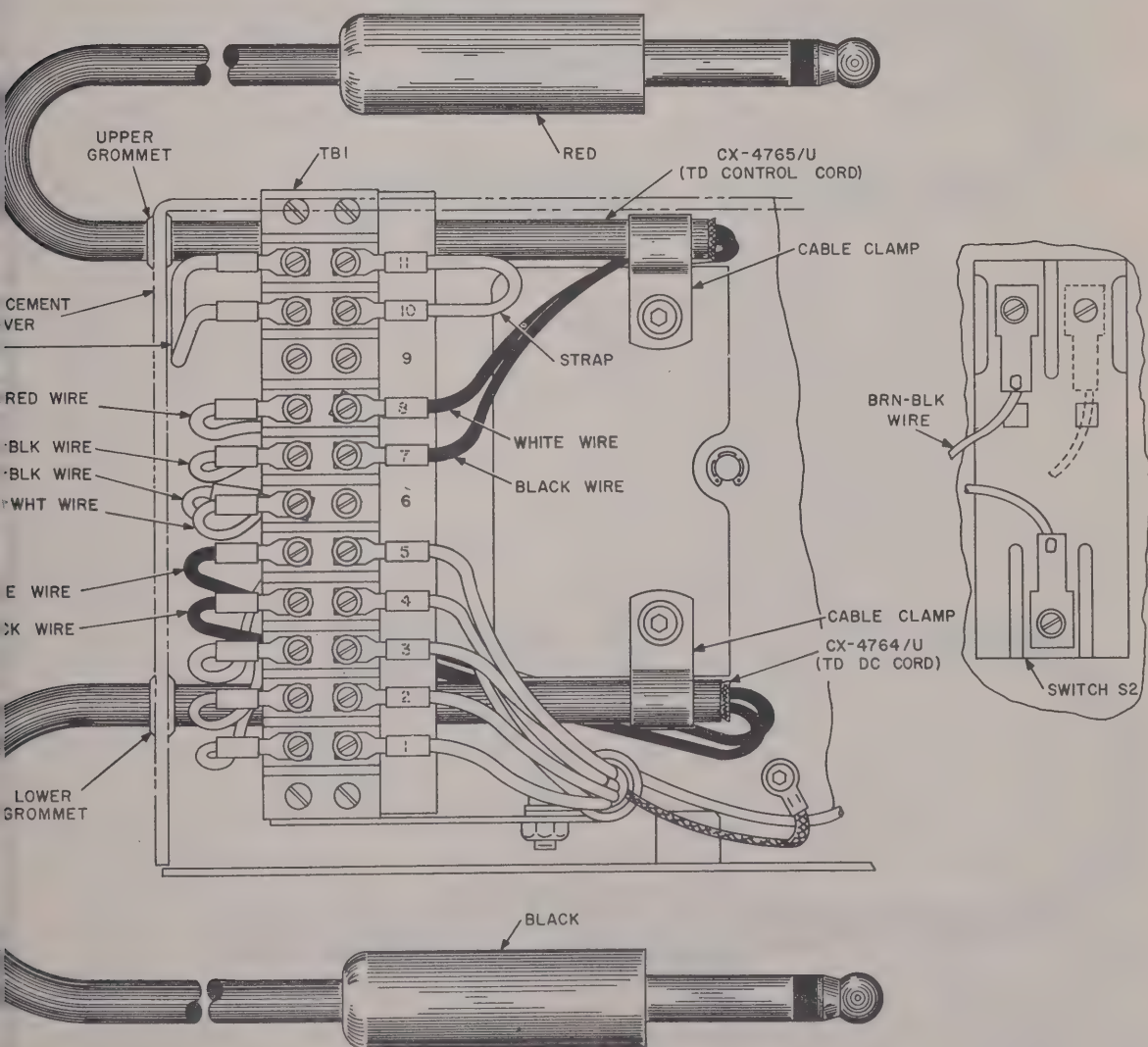
26. Installation of Teletypewriter Reperforator Transmitter TT-76(*)/GGC

a. Modification (figs. 16 and 17). Before installing the TT-76(*)/GGC, modify the transmitter-distributor as follows:

- (1) Remove the cover from the transmitter-distributor (TM 11-2225).
- (2) Remove the replacement cover, two cable clamps, and Electrical Special Purpose Cable Assemblies CX-4764/U (7 ft 8 in.) and CX-4765/U (7 ft 8 in.) from the ACCESSORIES & SPARES cabinet.
- (3) Feed cable assembly CX-4764/U through the lower grommet in the rear of the replacement cover and feed cable assembly CX-4765/U through the upper grommet.
- (4) Secure the cables with the cable clamps; use existing screws and loops to secure the cables as shown in figures 16 and 17.
- (5) When modifying a TT-76/GGC, follow the procedures given in the chart in (*a*) below and refer to figure 16. When modifying a TT-76A/GGC, follow the procedures given in the chart in (*b*) below and refer to figure 17.

(a) TT-76/GGC.

Wire	Remove from terminal	Connect to terminal
White	4 on TB1	6 on TB 1
Red	5 on TB1	8 on TB 1
Black	Upper right terminal on switch S2	Upper left terminal on switch S2
	5 and 7 on TB 1	10 and 11 on TB 1
	4 and 6 on TB 1	10 and 11 on TB 1
Wire of CX-4765/U (plug).		8
Wire of CX-4765/U (plug).		7
Wire of CX-4764/U (plug).		5
Wire of CX-4764/U (plug).		4

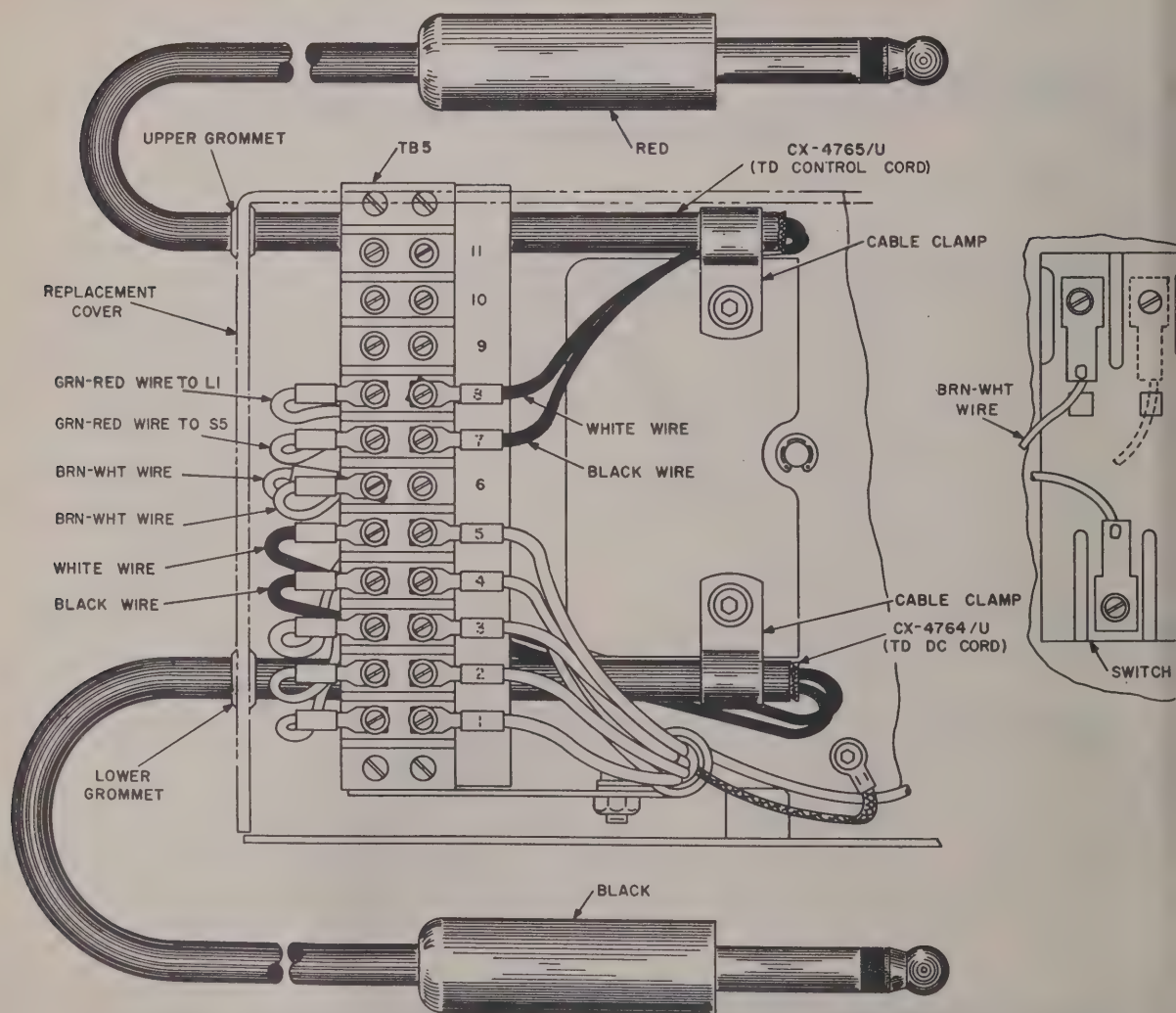


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Figure 16. Teletypewriter Reperforator-Transmitter TT-76/GGC, wiring modification diagram.

(b) TT-76A/GGC.

Wire	Remove from terminal	Connect to terminal
Brown-white (2 wires)-----	4 on TB 5-----	6 on TB 5
Green-red to L1-----	5 on TB 5-----	8 on TB 5
Green-red to S5-----	5 on TB 5-----	7 on TB 5
Brown-white-----	Upper right terminal on switch S5-----	Upper left terminal on switch S5
White wire of CX-4765/U (red plug).-----	-----	8
Black wire of CX-4765/U (red plug).-----	-----	7
White wire of CX-4764/U (black plug).-----	-----	5
Black wire of CX-4764/U (black plug).-----	-----	4



TM5815-205-1

Figure 17. Teletypewriter Reperforator-Transmitter TT-76A/GGC, wiring modification diagram.

- (6) Install the replacement cover.
- (7) Upon completion of the modification, attach a pressure-sensitive label marked CAUTION MODIFIED PER TM 11-5815-204-15. Proceed as follows:

- (a) Remove a pressure-sensitive label from the ACCESSORIES & SPARES cabinet.
- (b) Peel the protective cover from the back of the label and attach the label to the cover of the TT-76(*)/GGC.
- (c) Apply pressure to the label to insure complete adhesion.

Installation. The two TT-76(*)/GGC's shown in figure 6 are installed on mounting shelves. The shelves mount the base plate of either a TT-76/GGC or TT-76A/GGC. Install the upper TT-76(*)/GGC first. Remove the stepaper basket from its holder, then follow procedures given below:

Note. Omit (5) through (8) below when installing TT-76A/GGC.

- (1) Remove the bolts, nuts, and lockwashers from the shelf.
- (2) Place the TT-76(*)/GGC on the shelf. Aline the holes in the base of the equipment with the holes in the shelf.
- (3) Insert the bolts down through the bushings on the base plate. On the right side, the cover must be raised to locate the bushings.
- (4) Secure the TT-76(*)/GGC to the shelf by using the bolts, nuts, and lockwashers.
- (5) Remove the four screws that secure the plate containing the power switches to the TT-76/GGC and the four screws that secure the plate containing the selector switches (TM 11-2225).
- (6) Lift each plate carefully and insert the bolts through the holes in the base plate and mounting shelf.

Caution: Be careful not to break off the attached leads when lifting the plates.

- (7) Secure each bolt by using the lockwasher and nuts.
- (8) Replace the two plates.

- (9) Pull the lower shelf out on its slides and install the second TT-76(*)/GGC ((1) through (8) above).
- (10) Install the tape guide on the upper TT-76(*)/GGC (TM 11-2225).
- (11) Install the tape guide and chad bin assembly on the lower TT-76(*)/GGC and shelf (TM 11-2225).
- (12) Ground the power supply as follows:
 - (a) If a TT-76/GGC is supplied, connect the ground lead at the end of the power cord to the grounding lug on the ac duct near the TT-76/GGC outlets.
 - (b) On the TT-76A/GGC, the power cord is fitted with a three-pronged plug. Remove the screws that secure the third prong to the plug and turn the prong so it points opposite to the other two prongs. Disconnect the ground lead fastened to the third prong and connect it to the grounding lug on the ac duct near the TT-76(*)/GGC outlets.
- (13) Operate the POWER switch on left side of each keyboard to the OFF position and connect the power cord from each TT-76(*)/TGG to its respective receptacle TT-76 No. 1 or TT-76 No. 2.

27. Installation of Teletypewriter TT-4(*)/TG

Before installing the TT-4(*)/TG on its mounting shelf (fig. 6), two cable assemblies must be connected to the terminal board (TM 11-5815-206-12).

a. Connections.

- (1) Remove the dust cover.
- (2) Disconnect the shortening bar from SEND terminal 2 on the terminal board of the TT-4(*)/TG.
- (3) Check to insure that BATTERY terminals 5 and 6 are connected by a shortening bar.
- (4) Operate the VOICE FREQ. LINE-DC. LINE toggle switch (TM 11-5815-206-12) to VOICE FREQ. LINE.
- (5) Remove Electrical Special Purpose Cable Assemblies CX-4766/U (4 ft

8¼ in.) and CX-4767/U (4 ft 8¼ in.) from the ACCESSORIES & SPARES cabinet and connect them to the line terminal board as follows:

Cable	Wire color	Terminal	No.
CX-4766/U (black plug).	Black	Send	1
	White	Send	2
CX-4767/U (red plug).	Black	Rec	3
	White	Rec	4

- (6) Insert the cable assemblies ((5) above) and power cord in the cable bracket on the rear of the machine and replace the dust cover (TM 11-5815-206-12).

b. Installation.

- (1) Place the TT-4(*)/TG on its mounting shelf and position it so the rear edge of the TT-4(*)/TG base is under the bracket clamps at the rear of the shelf.
- (2) Place the fasteners on the front of the shelf over the edge of the TT-4(*)/TG base and turn the fasteners.
- (3) Connect the ground lead of the power cord plug of the TT-4(*)/TG to the ground terminal under the TT-4 receptacle (fig. 5) on the ac power duct.
- (4) Check to see that the motor switch is in the OFF position.
- (5) Connect the power cord plug to the TT-4 receptacle in the ac power duct (fig. 6).

28. Installation of Communication Security Equipment TSEC/KW-9

The mounting rack has two sliding shelves (fig. 6) for mounting TSEC/KW-9. TSEC/KW-9 is received in re-usable shipping cases. Remove the equipments from their cases. Store the cases on top of the shelter or in the trailer of the generator set. Install and connect the security equipment as follows:

a. Release the two TRANSIT LOCK fasteners and slide out the lower shelf.

b. Place the TSEC/KW-9 on the shelf with the four tapped holes in the base directly over the four holes in the shelf.

c. Secure the TSEC/KW-9 to the shelf with the screws and washers stored in the TSEC/KW-9 accessories case and spares cabinet. The screws are stored in the spares cabinet.

d. Remove Electrical Special Purpose Cable Assembly CX-4876/U (5 ft 5 in.) from the ACCESSORIES & SPARES cabinet and remove the protective covers from the plugs.

e. Insert one end of the cable into receptacle J101 on the left rear of the TSEC/KW-9.

f. Remove the TELETYPE ONLY plug from the CIPHER 2 receptacle in the signal duct and insert the loose end of the cable into the receptacle.

g. Insert the power cord plug into the CIPHER 2 receptacle in the ac power duct. For storage plug the TELETYPE ONLY plugs into dummy receptacles.

h. Slide the shelf back into position and secure it with the TRANSIT LOCK fasteners.

i. Release the two TRANSIT LOCK fasteners and slide out the upper shelf.

j. Place the other TSEC/KW-9 on the shelf with the four tapped holes in the base directly over the four holes in the shelf.

k. Secure the TSEC/KW-9 to the shelf using the screws and washers stored in the TSEC/KW-9 accessories case.

l. Remove Electrical Special Purpose Cable Assembly CX-4876/U (5 ft 5 in.) from the ACCESSORIES & SPARES cabinet and remove the protective covers from the plugs.

m. Insert one end of the cable into receptacle J101 on the left rear of the TSEC/KW-9.

n. Remove the TELETYPE ONLY plug from the CIPHER 1 receptacle in the signal duct and insert the loose end of the cable into the receptacle.

o. Insert the power cord plug into the CIPHER 1 receptacle in the ac power duct.

p. Slide the shelf back into position and secure it with the TRANSIT LOCK fasteners.

29. Installation of Telegraph-Telephone Signal Converter TA-182/U (fig. 7)

a. Installation. Install the six TA-182/U as follows:

- (1) Remove the covers from the TA-182/U's (TM 11-2137).
- (2) Remove the fuses from the covers and place them in the fuse holder on the left wall (fig. 6).
- (3) Remove one set of the instruction plates from inside of one of the covers and place it in the instruction holder on the front wall (fig. 8).
- (4) Remove the cable clamps, locknuts, retaining end, and center brackets from the threaded rods in the TA-182/U mounting rack. Also, remove the nuts which help secure the brackets to the rods before the TA-182/U's are installed.
- (5) Place TA-182/U No. 5 in the rack (fig. 7) and replace the retaining end bracket on the rod. Position the bracket over the left edge of the TA-182/U No. 5. Replace the locknut fingertight.
- (6) Place TA-182/U No. 6 in the rack. Position the center bracket over the edges of TA-182/U's No. 5 and No. 6

and the end bracket over the right edge of TA-182/U No. 6. Replace the locknuts fingertight.

- (7) Use a wrench and tighten all three locknuts; do not overtighten.
- (8) Replace the cable clamps.
- (9) Follow the procedures in (5) through (8) above to install TA-182/U's in positions No. 3, 4, 1, and 2, respectively.
- (10) Remove six identification holders from the ACCESSORIES & SPARES cabinet.
- (11) Use a screw driver and loosen the upper right fastener on each TA-182/U (fig. 7) and slip the proper identification holder under the fastener.
- (12) Tighten the fastener.

b. Connection. The connections to the binding posts on each of the BF ringers are identical.

- (1) Connect the cables (from the signal duct) designated TA-182/U 1 through 6 to the TA-182/U's as described in the chart below:

Cable	Wire lead	Color	Connect to TA-182/U No.	TA-182/U binding posts
A-182/U 1	1	White	1	LINE 1 4WS 2W
	2	Yellow	1	LINE 2 4WS 2W
	5	White	1	LOOP 5 4WR 2W
	6	Orange	1	LOOP 6 4WR 2W
A-182/U 2	1	White	2	LINE 1 4WS 2W
	2	Black	2	LINE 2 4WS 2W
	5	White	2	LOOP 5 4WR 2W
	6	Pink	2	LOOP 6 4WR 2W
A-182/U 3	1	White	3	LINE 1 4WS 2W
	2	Light brown	3	LINE 2 4WS 2W
	5	White	3	LOOP 5 4WR 2W
	6	Dark brown	3	LOOP 6 4WR 2W
A-182/U 4	1	White	4	LINE 1 4WS 2W
	2	Silver	4	LINE 2 4WS 2W
	5	White	4	LOOP 5 4WR 2W
	6	Dark green	4	LOOP 6 4WR 2W
A-182/U 5	1	White	5	LINE 1 4WS 2W
	2	Slate	5	LINE 2 4WS 2W
	5	White	5	LOOP 5 4WR 2W
	6	Slate	5	LOOP 6 4WR 2W
A-182/U 6	1	White	6	LINE 1 4WS 2W
	2	Light blue	6	LINE 2 4WS 2W
	5	White	6	LOOP 5 4WR 2W
	6	Light blue	6	LOOP 6 4WR 2W

- (2) Operate all TA-182/U switches on the front wall (fig. 8) to the OFF position. Insert each power cord plug into its proper TA-182/U receptacle.
- (3) Arrange the power cords neatly in the cable clamps.

30. Installation of Telephone Set TA-312/PT (fig. 7)

Install the telephone set on the right wall as follows:

- a. Open the telephone clamp on the wall mounting.
- b. Remove the telephone set from its canvas carrying case.
- c. Place the telephone set in the holder. Remove the handset from the handset bracket.
- d. Replace and fasten the telephone clamp over the telephone set.
- e. Replace the handset in the handset bracket and fasten the handset strap over the handset.
- f. Remove the telephone cord from the ACCESSORIES & SPARES cabinet.
- g. Connect the leads of the telephone cord to the telephone set binding posts.
- h. Insert the plug of the telephone cord in the LB PHONE jack on the JACK & BINDING POST panel (fig. 8).

31. Tool Equipment

- a. *Tool Equipment TE-49.* Place Tool Equipment TE-49 in its storage mounting (fig. 10) and fasten the web straps.
- b. *Tool Equipment TE-33.* Place two Tool Equipments TE-33 in the ACCESSORIES & SPARES cabinet.

32. Installation of Range Adapter Test Set TSEC/ST-3 (fig. 7)

- a. Place the TSEC/ST-3 case in the storage mounting with its carrying handle upright.
- b. Place the metal strap over the front of the case and under the carrying handle.
- c. Secure the fastener.

33. Installation of Teletypewriter Mixer SSM-33 and Transmitter Distributor TT-21/FG SSM-33 and TT-21/FG are not standard

equipments and should only be used as a secondary system in place of the two TSEC/KW-9. When this secondary system is supplied, install as described in *a* through *k* below.

a. If TSEC/KW-9's are already installed, remove them by reversing the procedure in paragraph 28.

b. Remove the six screws that secure the lower sliding shelf to the mounting rack. Remove the shelf and, together with the screws, store in a convenient location.

c. Install the SSM-33 in the space from which the lower sliding shelf was removed. Place the two mounting angles attached to the SSM-33 against the legs of the mounting rack so that the holes in the mounting angles are in line with the tapped holes in the legs. Secure the SSM-33 with the six screws and washers in the accessories case.

d. Mount two TT-21/FG's side by side on the top sliding shelf with the outer edges fitting under the two channels attached to the sides of the sliding shelf.

e. Remove the mounting channel from the ACCESSORIES & SPARES cabinet and place it between the two TT-21/FG's; line up the threaded holes in the channel with the holes in the sliding shelf. Engage the two notches in the channel with the rim on each TT-21/FG base.

f. Secure the mounting channel by using the screws supplied.

g. Install a rectifier in the AN/MGC-17; PP-1209/FG, or equivalent.

h. Fabricate a cable by using the TELETYPE ONLY plug and the parts shown on figure 1. Add resistors and wire to plug and rectifier. Connect the cable to the SSM-33.

i. Insert the plug into CIPHER 1 receptacle.

j. Connect power and signal cables from TT-21/FG to SSM-33.

k. Plug the power cord from the SSM-33 into the 115-volt receptacle CIPHER 1.

34. Connection of TH-5/TG's, TT-4(*)/TG, TT-76(*)/GGC's to Patching Panel

The cords and plugs which are to be permanently connected to jacks of the patching panel must be inserted through the right side entry of the panel and routed to the front

before being plugged into the proper jacks. the cover on the lower row of jacks before turning operation.

a. *Telegraph Terminals TH-5/TG.* Connect the cords attached to the three TH-5/TG's as indicated in the chart below.

Equipment		Patching panel jack
Type No.	Plug	
/TG NO. 1	Red	TH-5 NO. 1 LINE RED
/TG NO. 1	Black	TH-5 NO. 1 LINE BLACK
/TG NO. 2	Red	TH-5 NO. 2 LINE RED
/TG NO. 2	Black	TH-5 NO. 2 LINE BLACK
/TG NO. 3	Red	TH-5 NO. 3 LINE RED
/TG NO. 3	Black	TH-5 NO. 3 LINE BLACK

Teletypewriter TT-4()/TG.* Connect the cords attached to the TT-4(*)/TG as indicated in the chart below.

Equipment		Patching panel jack
Type No.	Plug	
(*)/TG	Red	TT-4 RED
(*)/TG	Black	TT-4 BLACK

Teletypewriter Reperforator-Transmitters TT-76()/GGC.* Remove two Electrical Special Telephone Cable Assemblies CX-4768/U (5 ft. 6 in.) from the ACCESSORIES & SPARES cabinet. Insert one end of each CX-4768/U into the TR jack on the right side of each TT-76(*)/GGC (TM 225). Connect the cords attached to the two TT-76(*)/GGC's as indicated in the chart below:

Equipment		Patching panel jack
Type No.	Plug	
3(*)/GGC NO. 1	CX-4765/U (red plug)	TD 1 CONT RED
3(*)/GGC NO. 1	Red REC	TT-76 NO. 1 REC RED
3(*)/GGC NO. 1	Black TR send	TT-76 NO. 1 SEND BLACK
3(*)/GGC NO. 1	Gray TD send	TT-76 NO. 1 TD GRAY
3(*)/GGC NO. 1	CX-4764/U (black plug)	TT-76 NO. 1 TD DC BLACK
3(*)/GGC NO. 1	CX-4768/U	TT-76 NO. 1 TR
3(*)/GGC NO. 2	CX-4765/U (red plug)	TD 2 CONT RED
3(*)/GGC NO. 2	Red REC	TT-76 NO. 2 REC RED
3(*)/GGC NO. 2	Black TR send	TT-76 NO. 2 SEND BLACK
3(*)/GGC NO. 2	Gray TD send	TT-76 NO. 2 TD GRAY
3(*)/GGC NO. 2	CX-4764/U (black plug)	TT-76 NO. 2 TD DC BLACK
3(*)/GGC NO. 2	CX-4768/U	TT-76 NO. 2 TR

Organizational Equipment Installation Test

Perform the following preliminary procedures (roughly below), check the ground (par. 25) power (par. 26) connections, check test procedures for nonsecure teletypewriter operation

(par. 36), and check test procedures for secure teletypewriter operation (par. 37).

a. Energize the ac circuits (par. 43).

b. Check to see that the power switches of the organizational equipment are in the OFF position.

c. Perform the preliminary starting and pre-setting procedures for the TT-4(*)/TG and TT-76(*)/GGC's as described in their technical manuals (app. I).

d. Operate the OPR POS circuit breaker on the POWER DISTRIBUTION PANEL to the ON position.

e. Check to see that the neon lamp above the circuit breaker is lighted.

f. Perform the starting procedures for the TT-4(*)/TG and TT-76(*)/GGC's as described in their technical manuals (app. I).

g. Test the TT-4(*)/TG and TT-76(*)/GGC's as described in their technical manuals (app. I).

h. Operate the SEND-REC-NORM switch on all TH-5/TG's to the NORM position.

i. Operate the TP-TG switch on all VF ringers to TG.

j. Operate the 2W-4W switch on all VF ringers to 2W.

k. Operate the three TH-5/TG switches (fig. 6) to the ON position.

l. Check to see that the neon lamp corresponding to each TH-5/TG switch is lighted.

m. Operate all TA-182/U switches (fig. 5) to the ON position.

n. Check to see that the neon lamp corresponding to each TA-182/U switch is lighted.

36. Nonsecure Teletypewriter Operation, Testing Procedures

a. Test Setup.

- (1) Check to be sure that all permanent patches between the TH-5/TG and TT-76(*)/GGC's, TT-4(*)/TG, and patching panel (par. 34) have been properly connected.
- (2) On each TH-5/TG (No. 1, No. 2, and No. 3), operate the 4W-2W-TG switch to the 2W position.
- (3) On the line unit of each TH-5/TG, operate the 4W FULL DUPLICATION NORMAL switch to the NORM position and the 2W SPEECH PL 4W-NORMAL 2W-4W switch to the NORMAL 2W position.
- (4) Make the following connections from the equipment to the patching panel:

Equipment		Patching panel jack
Type No.	Jack	
TH-5/TG NO. 1	LOOP SEND	TT-76 NO. 1 SEND
TH-5/TG NO. 1	LOOP SEND	TT-76 NO. 1 TD
TH-5/TG NO. 1	LOOP REC	TT-76 NO. 1 REC
TH-5/TG NO. 2	LOOP SEND	TT-76 NO. 2 SEND
TH-5/TG NO. 2	LOOP SEND	TT-76 NO. 2 TD
TH-5/TG NO. 2	LOOP REC	TT-76 NO. 2 REC
TH-5/TG NO. 3	LOOP SEND	TT-4 SEND
TH-5/TG NO. 3	LOOP REC	TT-4 REC

- (5) Make the following patches between the jacks on the patching panel:

Patching panel	
From jack	To jack
TH-5 LINE 1 4WS 2W	TA-182 LOOP 1
TH-5 LINE 2 4WS 2W	TA-182 LOOP 2
TA-182 LINE 1	TA-182 LINE 2
TH-5 LINE 3 4WS 2W	SB-22 OPR TH-5

b. Ringing Test.

- (1) On TH-5/TG No. 1, operate the RING switch. The buzzer on TH-5/TG No. 2 should sound.
- (2) On the TH-5/TG No. 2, operate the RING switch. The buzzer on TH-5/TG No. 1 should sound.
- (3) On TH-5/TG No. 3, operate the RING switch. The drop on line 17 on switchboard should operate.
- (4) Move the following plugs on the patching panel:

Patching panel	
From jack	To jack
82 LOOP 1	TA-182 LOOP 3
82 LOOP 2	TA-182 LOOP 4
82 LINE 1	TA-182 LINE 3
82 LINE 2	TA-182 LINE 4

- (5) Repeat (1) and (2) above.
- (6) Use field wire and strap binding posts pair 11 to pair 12 (top to top; bottom to bottom) on the SIGNAL BINDING POSTS box.
- (7) On the switchboard, insert the plug of line 17 into the jack of line 11.
- (8) On TH-5/TG No. 3, operate the RING switch. The drop on line 12 on the switchboard should operate.
- (9) Remove the plug of line 17 from jack of line 11 and insert it into the jack of line 12.
- (10) On TH-5/TG No. 3, operate the RING switch. The drop on line 11 on the switchboard should operate.
- (11) Restore the switchboard to normal.

Transmission Test.

- (1) Transmit from the keyboard or transmitter-distributor of TT-76(*)/GGC No. 1. Copy of the message should be received on the reperforator of TT-76(*)/GGC No. 1 and No. 2.
- (2) Transmit from the keyboard of transmitter-distributor of TT-76(*)/GGC No. 2. Copy of the message should be received on the reperforator of TT-76(*)/GGC No. 1 and No. 2.
- (3) Change the following patches on the patching panel:

Patching panel	
From jack	To jack
182 LOOP 3	TA-182 LOOP 1
22 OPR TH-5	TA-182 LOOP 2
182 LINE 3	TA-182 LINE 1
182 LINE 4	TA-182 LINE 2

- (4) Transmit from the keyboard of the TT-4(*)/TG. Copy of the message should

be received on the reperforator of the TT-76(*)/GGC No. 1 and on the TT-4(*)/TG.

- (5) Transmit from the keyboard or transmitter-distributor of TT-76(*)/GGC No. 1. Copy of the message should be received on the TT-4(*)/TG, and on the reperforator of the TT-76(*)/GGC No. 1.

d. Procedure at Completion of Test.

- (1) Remove all patches from the patching panel except the permanent connections under the hinged cover (par. 34).
- (2) Remove all field wire connections from the binding posts on the SIGNAL BINDING POSTS box.

37. Secure Teletypewriter Operation, Testing Procedures

Note. Perform the nonsecure teletypewriter operation testing procedure (par. 36) before testing the secure teletypewriter operation.

a. Test Setup.

- (1) Check to be sure that all permanent patches between the TH-5/TG's, TT-76(*)/GGC's, TT-4(*)/TG, and patching panel (par. 34) have been properly connected.
- (2) On TH-5/TG No. 1 and TH-5/TG No. 2, operate the 4W-2W-TEL switch to the 2W position.
- (3) On the line unit of each TH-5/TG, operate the 4W FULL DUPLEX-NORMAL switch to the NORMAL position and the 2W SPEECH PLUS 4W-NORMAL 2W-4W switch to the NORMAL 2W position.
- (4) Make the following connections from the equipment to the patching panel:

Equipment		Patching panel jack
Type No.	Jack	
TH-5/TG NO. 1	LOOP SEND	CIPHER 1 TH-5 LOOP SEND
TH-5/TG NO. 1	LOOP REC	CIPHER 1 TH-5 LOOP REC
TH-5/TG NO. 2	LOOP SEND	CIPHER 2 TH-5 LOOP SEND
TH-5/TG NO. 2	LOOP REC	CIPHER 2 TH-5 LOOP REC

- (5) Make the following patches between the jacks on the patching panel:

Patching panel	
From jack	To jack
TT-4 REC	CIPHER 2 PRINTER
TT-4 SEND	CIPHER 2 KBD SIG
TH-5 LINE 1 4WS 2W	TH-5 LINE 2 4WS 2W
TT-76 NO. 1 REC	CIPHER 1 PRINTER
TT-76 NO. 1 SEND	CIPHER 1 KBD SIG
TT-76 NO. 1 TD	CIPHER 1 TD SIG

b. Testing Communication Security Equipment. Perform half-duplex testing in plain and cipher modes of operation as follows:

Note. Local full-duplex testing is not required to test TSEC/KW-9 because half-duplex testing operates the equipment to its full capacity.

(1) *Plain Operation.*

- Place the P-C switch on the TSEC/KW-9 No. 1 in the P position.
- Install tape in the TT-76(*)/GGC No. 1 transmitter-distributor (TM 11-2225).

- Move the STOP-START-FEED-RETRACT switch on transmitter-distributor to the START position.
 - Check to see that TT-76(*)/GGC No. 1 transmitter-distributor will not transmit tape.
 - Depress CIPHER No. 1 text switch. Tape should now transmit.
- (2) *Cipher Operation.*
- Place the P-C switch on TSEC/KW-9 No. 1 in the C position and check to see that tape is transmitted.
 - Remove the patch cord from the CIPHER 1 TD SIG jack on the patching panel and insert it into the CIPHER 2 TD SIG jack.
 - Repeat (1) through (6) above; use TSEC/KW-9 No. 2, TT-76(*)/GGC No. 2, and CIPHER No. 2 text switch.

c. Procedure for Completing Test. Remove all patches from the patching panel except the permanent connections under the hinged cover (par. 34).

Section II. PREOPERATIONAL PROCEDURES

38. Siting

a. The location of the AN/MGC-17 will depend upon its use in the division area type communications system. The considerations affecting the siting of the AN/MGC-17 and the factors governing the distance of the AN/MGC-17 to the other shelters in the system are covered in TM 11-5805-204-15.

b. When the shelter is placed on the ground, it should be located on firm, dry ground with good drainage. The site should be prepared and leveled, and if possible, the shelter should be placed on concrete blocks or wooden beams.

c. Place the generator set approximately 75 feet from the shelter.

39. Installation of Shelter

Note. To install the shelter on the ground or on a truck, four men and a crane, winch, or helicopter capable of lifting 2,000 pounds are required.

a. Loading Shelter (fig. 18). If the shelter is to be loaded on a truck, proceed as follows:

- Use the sling hooks nearest the turnbuckles and hook the four sling assemblies to the shelter lifting eyes.

- Lay the sling assemblies on top of the shelter.
- Hook the four sling hooks in the lifting ring.
- Slip the lifting ring over the hook of the lifting device.

Warning: To avoid injury to personnel and damage to equipment, only the personnel engaged in the actual loading operation should be permitted near the truck, lifting device, and shelter. To eliminate confusion, all instructions must come from the loading crew supervisor.

- Tie a 1/2-inch guide rope (at least 10 feet long) to each of the rear towing eyes.
- Check to see that all tools and equipment are removed from the truck body and lower the tailgate.
- Slowly lift the shelter from the ground to a position high enough to clear the truck body.

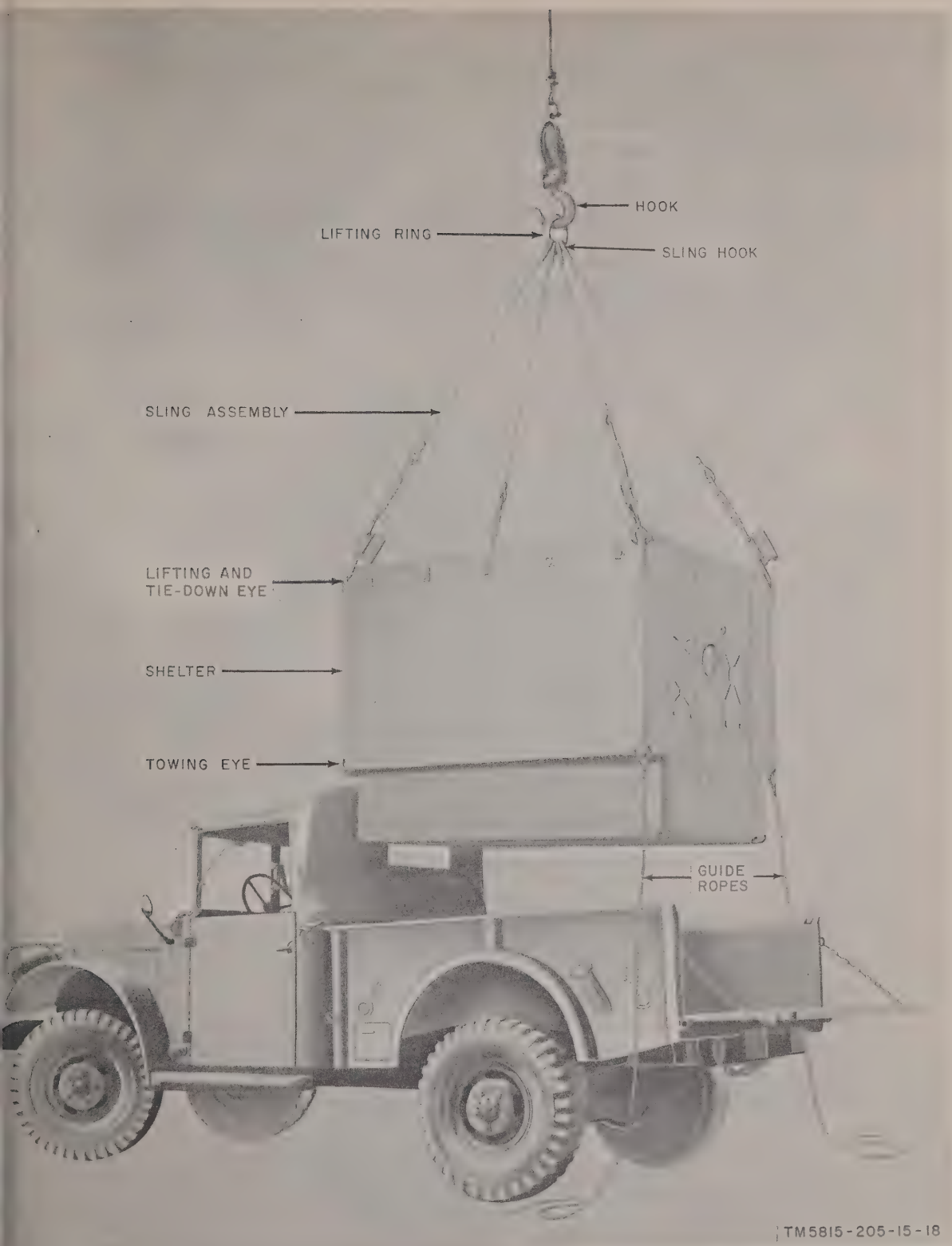


Figure 18. Loading shelter.

- (8) Back the truck into position under the shelter.

Warning: All personnel must remain clear of the truck while the shelter is being lowered into position.

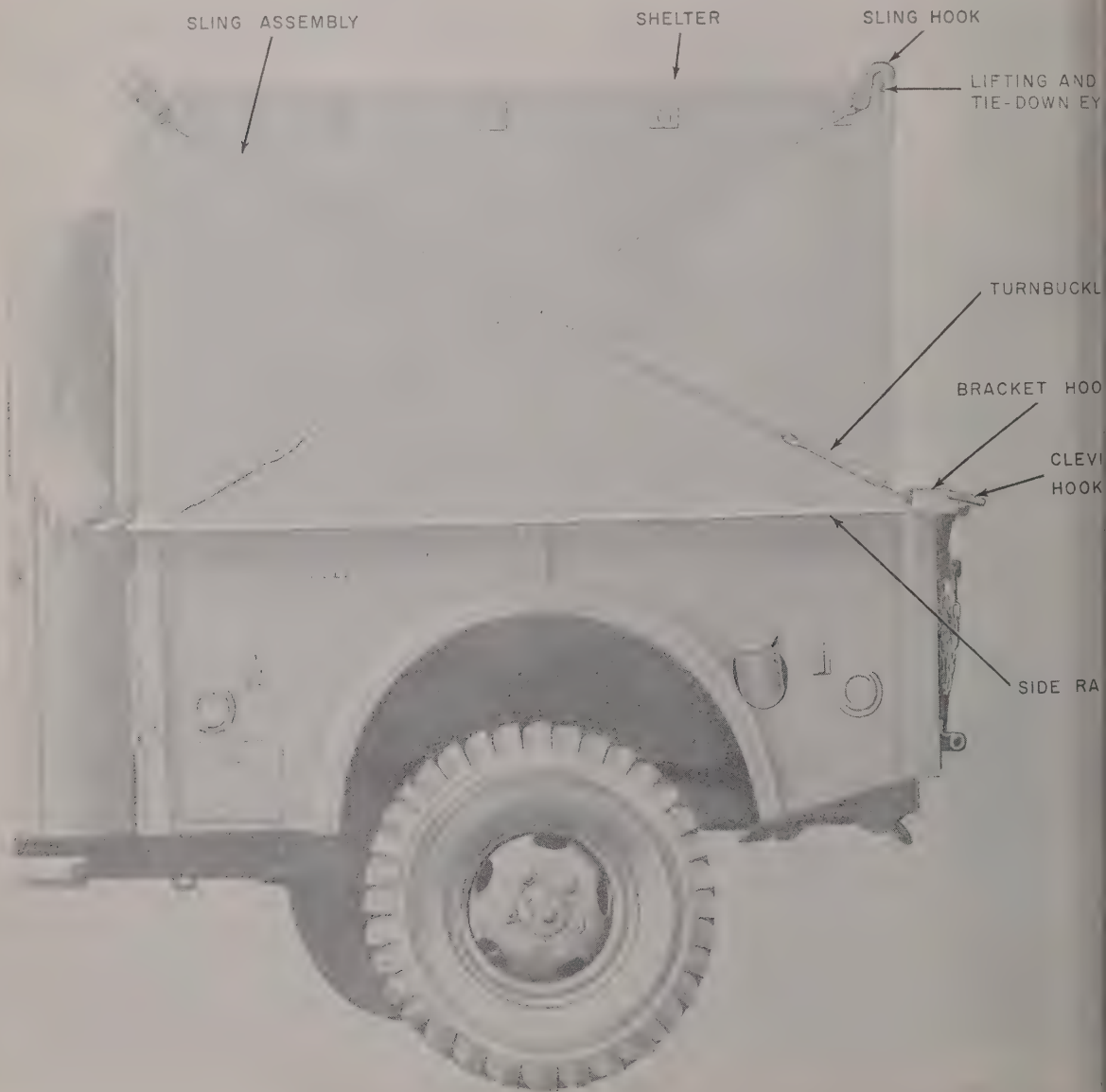
- (9) Position a man at each of the guide ropes to hold the shelter in position. Slowly lower the shelter into the truck body.

Note. The door of the shelter must be at the rear of the truck and the front of the shelter must be abutted against the front of the truck body.

- (10) Remove the lifting ring from the lifting hook and disassemble the lifting ring and sling hooks.
- (11) Remove the four sling hooks from the shelter lifting eyes.
- (12) Remove the guide ropes.

b. *Securing Shelter to Truck* (fig. 19).

- (1) Use the sling hooks at the end farthest from the turnbuckles and hook each of the four sling assemblies to a tiedown eye of the shelter.
- (2) Use the sling assembly which is attached to the tiedown eye at the front of the shelter.



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Figure 19. Shelter mounted on truck.

of the shelter and place the sling hook nearest the turnbuckle under the side rail and behind the cargo rack support second from the rear.

- (3) Use the sling assembly which is attached to the tiedown eye at the rear of the shelter and place the sling hook nearest the turnbuckle under the side rail and in front of the cargo rack support second from the front.
- (4) Repeat the procedures in (1) through (3) above to secure the other side of the shelter.

Caution: Do not overtighten the turnbuckles. To prevent twisting the

shelter in the truck body, tighten all of the turnbuckles at the same time.

c. Unloading. To unload the shelter from the truck, reverse the procedures given in *a* and *b* above, and mount the shelter on the ground (par. 38).

40. Controls and Instruments

This paragraph describes, locates, illustrates, and gives the function of the controls and instruments used in Teletypewriter Central Office AN/MGC-17. The controls and instruments for the organizational equipment are covered in their respective technical manuals (app. I).

a. POWER DISTRIBUTION PANEL (fig. 13).

Control or instrument	Function and description
MAIN circuit breaker (2 ganged circuit breakers 8A and 8B).	Rating: 50 amperes, two-position ON-OFF switch. Provides overload protection for incoming 115-volt ac power supply. Controls ac power supply to the other circuit breakers.
Circuit breakers:	Rating: 15 amperes, two-position ON-OFF switches.
1—LIGHTS	Provides overload protection to all lighting devices.
2—OPR POS	Provides overload protection to the organizational equipment.
3—BLOWER 1	Provides overload protection to blower No. 1.
4—BLOWER 2	Provides overload protection to blower No. 2.
5—CONVENIENCE RECEPTACLE.	Provides overload protection to convenience receptacle.
6—HEATER	Provides overload protection to HEATER receptacle.
7—OVERLOAD	Rating: 22 amperes, two-position ON-OFF switch, protecting the power unit from being overloaded.
VOLTAGE meter (voltmeter (0-150 scale)).	Indicates ac voltage input to shelter.
CURRENT meter (ammeter (0-50 scale)).	Indicates amount of alternating current used by shelter equipment.

b. Miscellaneous Switches.

Control or instrument	Function and description						
NEON switch (fig. 9)	Two-position ON-OFF switch. Controls neon lamp.						
NORMAL-BLACKOUT switch (fig. 9).	Two-position ON-OFF switch. Controls all lighting in shelter except the neon lamp.						
	<table><tr><td></td><td><i>Function</i></td></tr><tr><td><i>SW pos</i> NORMAL</td><td>Permits lights to be controlled by their individual switches.</td></tr><tr><td>BLACKOUT</td><td>Permits door microswitch to control all lights except the neon lamp.</td></tr></table>		<i>Function</i>	<i>SW pos</i> NORMAL	Permits lights to be controlled by their individual switches.	BLACKOUT	Permits door microswitch to control all lights except the neon lamp.
	<i>Function</i>						
<i>SW pos</i> NORMAL	Permits lights to be controlled by their individual switches.						
BLACKOUT	Permits door microswitch to control all lights except the neon lamp.						
Door microswitch (fig. 9)	Controls all lighting, except neon lamp, when NORMAL-BLACKOUT switch is on BLACKOUT. When the door is closed the lights go on.						
FLUORESCENTS switch (fig. 9)	Two position ON-OFF switch. Controls all fluorescent lights.						
A-182/U No. 1 through No. 6 switches on the front wall (fig. 8).	Two position ON-OFF switches. Controls ac power to VF ringers No. 1 through No. 6.						
H-5/TG No. 1 through No. 3 switches on the left wall (fig. 6).	Two position ON-OFF switch. Controls ac power to TH-5/TG's No. 1 through No. 3.						
NIGHT ALARM switch (fig. 6)	Two position ON-OFF switch. Controls NIGHT ALARM buzzer.						

c. Electrical Space Heater HD-375/U.

Control or instrument	Function and description
OFF-HEAT-FAN ONLY switch	Three-position switch. <div><div>SW pos</div><div>Function</div></div> <div>OFFCuts off ac power to heater.</div> <div>HEATApplies ac power to the heater element and fan motor.</div> <div>FAN ONLYApplies ac power to the fan motor only.</div>
OFF-HI-MED-LO switch	Four-position switch. Controls amount of heat from heater.
RESET circuit breaker	Rating: 15 amperes. Overload and overheat protection to heater.

d. Switch Box SA-331/U.

Control or instrument	Function
POWER SUPPLY switch	Two-position switch. Permits transfer of power from one power source to another. <div><div>SW pos</div><div>Function</div></div> <div>NO 1Connects the OUTPUT receptacle to the INPUT NO. 1 receptacle on the switch box.</div> <div>NO 2Connects the OUTPUT receptacle to the INPUT NO. 2 receptacle on the switch box.</div>

41. Grounding

To reduce the hazard of electrical shock, Teletypewriter Central Office AN/MGC-17 must be properly grounded before connecting the shelter to the power source. Select a site for the ground rod so it will not interfere with the entrance to the shelter, field wires, or power and signal cables. Ground both the shelter and the generator set as follows:

a. Shelter.

- (1) Loosen the fasteners and lift the cover of the SIGNAL & POWER ENTRANCE box (fig. 12). Straighten the stays to hold the cover up.
- (2) Fold the side flaps out from under the cover and hook them onto the retaining studs at each side of the SIGNAL & POWER ENTRANCE box.
- (3) Remove the switchbox (fig. 6), the ground rod (fig. 7), and the sledge hammer (fig. 8) from their mountings.
- (4) Install the ground rod as follows:
 - (a) Select the lowest, dampest site within 10 feet of the shelter, preferably in clay or loamy soil.
 - (b) Scoop out a small hole about 6 inches deep in the selected location.

- (c) Remove any paint or grease from the ground rod.
- (d) Drive the ground rod into the hole until the top is approximately 12 inches above the bottom of the hole.
- (e) Saturate the ground around the rod with water. Keep the ground around the rod moist.
- (5) Remove the ground lead from the ACCESSORIES & SPARES cabinet.
- (6) Connect one end of the ground lead to the ground rod and the other end to the GRD lug (fig. 12) in the SIGNAL & POWER ENTRANCE box.

b. Generator Set.

- (1) Remove the ground rod from the generator mounting.
- (2) Install the ground rod (a (4) above).
- (3) Mount the switchbox on the trailer (fig. 1).
- (4) Remove the ground lead from the ACCESSORIES box in the generator.
- (5) Connect one end of the ground lead to the ground rod and the other end to the GND lug on the switchbox.

42. Power Connections

Before making any power connections,

that all circuit breakers and switches are in their OFF positions (figs. 9 and 13).

Warning: Both the shelter and the generator set must be grounded (par. 41) before power is connected.

a. Generator Set. When the generator set is used to supply power, proceed as follows:

- (1) Remove the power cable and power studs from their cable reels (fig. 10).
- (2) Connect the red and white leads of one power stud to the neutral terminal and the black lead to the positive terminal of the filter box of one generator set.
- (3) Remove the cover from the connector of the power stud ((2) above) and connect the power stud to the INPUT No. 1 receptacle on the switchbox.
- (4) Connect the red and white leads of the other power stud to the neutral terminal and the black lead to the positive terminal of the filter box of the other generator set.
- (5) Remove the cover from the connector of the power stub ((4) above) and connect the power stub to INPUT No. 2 receptacle on the switchbox.
- (6) Remove the covers from both connectors of the power cable and connect the female connector to the POWER IN receptacle in the SIGNAL & POWER ENTRANCE box (fig. 12) and the other connector to the OUTPUT receptacle on the switchbox.

b. Commercial Power Source. When a commercial power source is used, proceed as follows:

- (1) Disconnect the power from the commercial power source terminals.
- (2) Remove the power cable and one power stub from their reel (fig. 10).
- (3) If the power supply is 50-60 cps, 115 volts, single-phase, or 115/230 volts, three-wire single-phase, connect the red and white leads of the power stub to the neutral terminal and the black lead to one of the other terminals.
- (4) If the power supply is 50-60 cps, 120/208 volts, four-wire, three-phase grounded neutral distribution system, connect the red and white leads to the neutral wire and the black lead to

either phase 1, phase 2, or phase 3 terminal.

- (5) Remove the covers from the connector of the power stub and junction box (fig. 9) and connect the power stub to the male side of the junction box.
- (6) Remove the cover from the male connector of the power cable and connect it to the other receptacle of the junction box.
- (7) Remove the covers from the female connector of the power cable and the POWER IN receptacle in the SIGNAL & POWER ENTRANCE box and interconnect the connector and receptacle.

43. Energizing Ac Circuits

a. When the generator set is used to supply the power, start the power unit (TM 11-900A).

b. When a commercial power source is used, restore power to the source terminals.

c. Operate the MAIN circuit breaker to the ON position (fig. 13).

d. Check the voltmeter. It should indicate 115 volts ac.

e. Check the ammeter. It should indicate zero.

f. Operate the LIGHTS circuit breaker to the ON position.

g. Operate the NEON and FLUORESCENTS switches (fig. 9) to their ON positions.

h. Operate the NORMAL-BLACKOUT switch to the NORMAL position. When blackout conditions are required, operate the switch to the BLACKOUT position.

Caution: Open the blower vents and the air filter cover on the outside of the shelter before operating the blowers.

i. Operate BLOWER 1 and BLOWER 2 circuit breakers to their ON positions. Check to see that the blowers are operating. Operate BLOWER 1 or BLOWER 2 circuit breaker to the OFF position. One of the blowers is used as a spare.

j. Operate the HEATER circuit breaker to the ON position as required.

k. Operate the heater OFF-HEAT-FAN ONLY switch to the position required.

l. Check the ammeter. It should indicate less than 16 amperes.

Section III. SIGNAL CONNECTIONS

44. Circuit Planning

The AN/MGC-17 is normally connected to the SB-611/MRC through a 26-pair cable. In the AN/MGC-17, 19 pair are connected in parallel with binding posts in the SIGNAL BINDING POSTS box and terminated inside the shelter; seven pairs are unterminated spares. One pair, terminated in the JACK & BINDING POSTS panel, is used for intershelter communications; 12 pairs, terminated in the SB-22/PT, are used for switching of local or trunk circuits; 6 pair, terminated in the patching panel, are used for the three teletypewriter equipments (3 full-duplex or 3 half-duplex circuits). When the 26-pair receptacle is used to connect a cable to the SB-611/MRC, the corresponding binding posts are not available for local circuits unless dummy plugs are inserted in the patching panel of the SB-611/MRC.

a. Local Circuits on Field Wire. Local circuits are connected to binding posts in the SIGNAL BINDING POSTS box or to a dropline box.

(1) *SIGNAL BINDING POSTS box.* Local circuits are connected through the SIGNAL BINDING POSTS box by connecting field wire to a pair of binding posts (par. 46).

(2) *Dropline box.* Local circuits are connected through a dropline box by connecting a 26-pair cable between one of the 26-pair receptacles on the dropline box and the 26-pair receptacle in the SIGNAL & POWER ENTRANCE box (par. 45). Field wire is then connected to a pair of binding posts on the dropline box (par. 46).

b. Local or Trunk Circuits on Cable. Local and trunk circuits are established directly, or through a dropline box, to the SB-611/MRC. A 26-pair cable is connected between SIGNAL 1 receptacle of the AN/MGC-17 and a SIG IN or SIG OUT receptacle of the SB-611/MRC. These circuits appear in the AN/MGC-17 on lines 1 through 12 of the switchboard and lines 13 through 18 of the patching panel.

c. Special Circuits. An intershelter local battery telephone circuit is established on pair No. 26 when a 26-pair cable is connected between SIGNAL 1 receptacle of the AN/MGC-17 and

SIG IN or SIG OUT receptacle of the SB-611/MRC. When SIGNAL 1 receptacle is not used, the circuits are established by connecting field wire between the LB PHONE binding post in the SIGNAL BINDING POSTS box of the AN/MGC-17 and the corresponding pair of binding posts in another shelter. The A and B binding posts in the SIGNAL BINDING POSTS box and on the JACK & BINDING POST panel provide entry into the shelter for two pairs. These binding posts are used to interconnect additional telephone sets or other equipment inside and outside the shelter.

45. Cable Connections, 26-pair

Connections of 26-pair cables to either the SIGNAL & POWER ENTRANCE box or to the dropline box are made in the same way. To connect a 26-pair cable, proceed as follows:

a. Remove a 26-pair cable from its reel (par. 10).

b. Remove the protective cover from the 26-pair receptacle in the SIGNAL & POWER ENTRANCE box or from the dropline box as follows from the 26-pair connector as follows:

(1) Turn the locking ring counterclockwise until the orange mark on the sleeve is in line with the OPEN mark on the cover.

(2) Disengage the slot on the cover from the cam on the connector.

(3) Lift the cover off the connector.

c. Connect the 26-pair connector of the 26-pair cable to the 26-pair receptacle as follows:

(1) Place the connector on the receptacle so that the male and female portions of the connector mate with those of the receptacle and press them firmly together.

(2) Turn the locking ring of the receptacle counterclockwise until the orange mark is in line with the CLOSED mark on the receptacle.

(3) Turn the locking ring of the connector clockwise until the orange mark is in line with the CLOSED mark on the connector.

6. Field Wire Connections

To make field wire connections to the binding posts in the SIGNAL BINDING POSTS box or the dropline box, proceed as follows:

a. SIGNAL BINDING POSTS Box.

- (1) Loosen the wing fasteners and lift the cover of the SIGNAL BINDING POSTS box.
- (2) For switchboard connections to local circuits, connect field wire to the binding posts (pairs 1-12) as required (par. 10). Record the connections made.
- (3) For teletypewriter line connections to local circuits, connect field wire to the binding posts (pairs 13-18). Record the connections made.
- (4) To connect to the telephone set, use

the LB PHONE binding posts, if the SIGNAL 1 receptacle is not being used.

- (5) When the A or B binding posts in the SIGNAL BINDING POSTS box (fig. 11) are used, connect field wire between the binding posts of the telephone set or other equipment and the A and B binding posts on the JACK & BINDING POST panel.
- (6) When all connections have been made in the SIGNAL BINDING POSTS box, pull out the cover flaps, lower the cover, and fasten the flaps. A slot in each flap engages a stud on the side of the box.

b. Dropline Box.

- (1) Loosen the snapslide fastener and lift the cover.
- (2) Connect field wire through the side slots to the binding posts as required.

Section IV. OPERATION

7. Types of Operation

The teletypewriter equipments, Communication Security Equipments, and associated VF equipment may be arranged to operate half-duplex or full-duplex, by making patched connections at the patching panel. They may be connected to local circuits or to an SB-611/MRC. Telephone TA-312/PT provides communication between the AN/MGC-17 and the SB-611/MRC. The operating procedures for all organizational equipment are described in the appropriate manual (app. I).

8. Operating Procedures

- a. Determine the facilities required and make the necessary connections (pars. 44-46).
- b. Operate the TH-5/TG switches, located on the left wall (fig. 6), to the ON position as required.
- c. Operate the switches on each TH-5/TG (TM 11-2239) for the desired type of operation as indicated in the chart below:

Type of operation	NORM-RECEIVE switch position	4W-2W-TEL switch position
Half-duplex (two-wire)	NORM	2W
Half-duplex (four-wire)	NORM	4W
Full-duplex	NORM	4W

- d. Operate the switches on the line unit on each TH-5/TG for the desired type of operation as indicated in the chart below:

Type of operation	4W FULL DUPLEX-NORMAL switch position	2W SPEECH PLUS 4W-NORMAL 2W-4W switch position
Half-duplex (two wire).	NORMAL	NORMAL 2W
Half-duplex (four-wire).	NORMAL	4W
Full-duplex	4W FULL DUPLEX	4W

- e. Operate the TA-182/U switches, located on the front wall (fig. 8), to ON as required.

- f. Operate the switch on each TA-182/U (TM 11-2137) for the desired type of operation as indicated in the chart below:

Type of operation	TP-TG switch position	2W-4W switch position
Half-duplex (two-wire)	TG	2W
Half-duplex (four-wire)	TG	4W
Full-duplex	TG	4W

g. Perform the preliminary starting procedures for the organizational equipment as described in the applicable technical manual.

h. Make the appropriate patched connections (pars. 49 and 50) for the desired type of teletypewriter operation.

49. Nonsecure Teletypewriter Operation, Patching

Various operating combinations, using the TT-4(*)/TG or the TT-76(*)/GGC, can be obtained by making patched connections between jacks on the patching panel (fig. 14) and to jacks on the equipment. The TT-4(*)/TG is used primarily with the SB-22/PT; when not in use, the TT-4(*)/TG may be used for other types of operation. Subparagraphs a through h below describe the various patched connections. Determine the facilities required and make the necessary connections.

a. Half-Duplex (Two-Wire or Four-Wire) and Full-Duplex Operation, Using TT-4(*)/TG (A, fig. 20).

Patching panel jack	Equipment	
	Type No.	Jack
TT-4 REC	TH-5/TG NO. 3	LOOP REC
TT-4 SEND	TH-5/TG NO. 3	LOOP SEND

Note. TH-5/TG NO. 3 is connected through normal-through jacks to lines 17 and 18.

b. Half-Duplex (Two-Wire or Four-Wire) and Full-Duplex Operation, Using TT-76(*)/GGC (B, fig. 20). TT-76(*)/GGC No. 1 or TT-76(*)/GGC No. 2 may be used.

Patching panel jack	Equipment	
	Type No.	Jack
TT-76 NO. 1 SEND.	TH-5/TG NO. 1	LOOP SEND
TT-76 NO. 1 TD.	TH-5/TG NO. 1	LOOP SEND
TT-76 NO. 1 REC.	TH-5/TG NO. 1	LOOP REC

Note. TH-5/TG NO. 1 is connected through normal-through jacks to lines 13 and 14.

c. Half-Duplex (Two-Wire or Four-Wire) and Full-Duplex Operation, Using TT-4(*)/TG and TT-76(*)/GGC (C, fig. 20).

(1) TT-4(*)/TG.

Patching panel jack	Equipment	
	Type No.	Jack
TT-4 REC	TH-5/TG NO. 3	LOOP REC
TT-4 SEND	TH-5/TG NO. 3	LOOP SEND

Note. TH-5/TG NO. 3 is connected through normal-through jacks to lines 17 and 18.

(2) TT-76(*)/GGC TT-76(*)/GGC No. 1 or TT-76(*)/GGC No. 2 may be used.

Patching panel	
From jack	To jack
TT-4 SEND	TT-76 TD
TT-4 REC SERIES	TT-76 REC

d. Half-Duplex (Two-Wire) Operation, Using TT-4(*)/TG, TH-5/TG, and TA-182/U (fig. 20).

(1) TT-4(*)/TG.

Patching panel jack	Equipment	
	Type No.	Jack
TT-4 REC	TH-5/TG NO. 3	LOOP REC
TT-4 SEND	TH-5/TG NO. 3	LOOP SEND

(2) TA-182/U.

Patching panel	
From jack	To jack
TA-182 LOOP (1, 2, 3, or 4)	TH-5 LINE 3 4WS
TA-182 LINE (1, 2, 3, or 4)	LINE 17

e. Half-Duplex (Two-Wire) Operation, Using TT-76(*)/GGC, TH-5/TG and TA-182/U (fig. 20).

(1) TT-76(*)/GGC. TT-76(*)/GGC No. 1 or TT-76(*)/GGC No. 2 may be used.

Patching panel jack	Equipment	
	Type No.	Jack
TT-76 NO. 1 REC.	TH-5/TG NO. 1	LOOP REC
TT-76 NO. 1 SEND.	TH-5/TG NO. 1	LOOP SEND
TT-76 NO. 1 TD.	TH-5/TG NO. 1	LOOP SEND

(2) TA-182/U.

Patching panel	
From jack	To jack
A-182 LOOP (1, 2, 3, or 4)	TH-5 LINE 1 4WS 2W
A-182 LINE (1, 2, 3, or 4)	LINE 13

f. SB-22/PT, Answering Calls (F, fig. 20). To answer switchboard calls using the TT-4(*)/TG or a TT-76(*)/GGC and TH-5/G, proceed as follows:

- (1) Make the appropriate connections for the desired type of equipment.

Patching panel jack	Equipment	
	Type No.	Jack
TT-4 REC	TG-5/TG NO. 1, NO. 2, or NO. 3	LOOP REC
or TT-76 NO. 1 or NO. 2	TH-5/TG NO. 1, NO. 2, or NO. 3	LOOP REC
TT-4 SEND	TH-5/TG NO. 1, NO. 2, or NO. 3	LOOP SEND
or TT-76 NO. 1 or NO. 2	TH-5/TG NO. 1, NO. 2, or NO. 3	LOOP SEND

- (2) On the patching panel, patch from the TH-5 LINE (1, 2, or 3) 4WS 2W jack to the SB-22 OPR TH-5 jack.

- (3) Connect the plug from line pack 17 on the switchboard into the calling party's jack. Answer with the TT-4(*)/TG or TT-76(*)/GGC and determine the destination of the call.

- (4) If the calling party wishes to be switched to another line on the switchboard, remove the line 17 plug from

the calling line, insert it in the jack of the line to be called, and ring with the TH-5/TG. The drop of line 17 will operate and the alarm will sound.

- (5) Insert the plug from the line pack of the called line into the jack on the calling line. Check the transmission.
- (6) Remove the operator's plug from the called line and insert it in the jack of line 17. This will restore the drop and the alarm will stop.

g. Tape Perforation on TT-76(*)/GGC from TT-4(*)/TG Keyboard (G, fig. 20).

- (1) Operate the selector switch on the TT-76(*)/GGC to the 3 LOCAL RE-PUNCH position.
- (2) On the patching panel, patch from the TT-4 SEND jack to the TT-76 (No. 1 or No. 2) LOCAL jack.

h. Page Printing on TT-4(*)/TG from TT-76(*)/GGC Transmitter-Distributor (H, fig. 20).

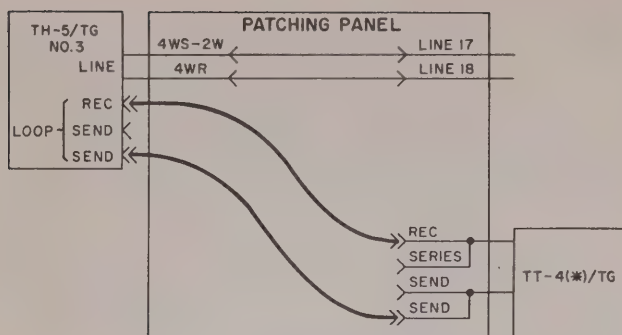
- (1) Operate the selector switch on the TT-76(*)/GGC to the 3 LOCAL RE-PUNCH position.
- (2) On the patching panel, patch from the TT-4 REC jack to the TT-76 (NO. 1 or NO. 2) LOCAL jack.

i. Series Jacks, DC Operation (fig. 26). Use the series jacks in the patching panel to reverse the polarity in the dc source or to connect equipment in series as follows:

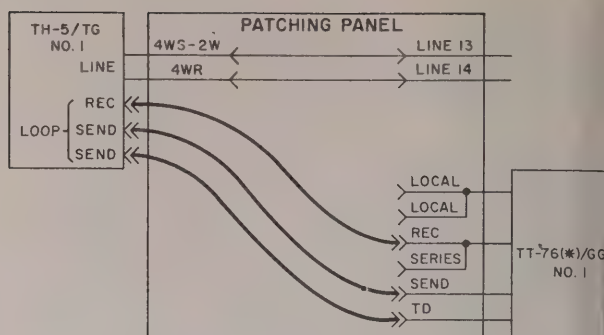
- (1) Insert the plug from the equipment supplying the battery for the loop into SERIES REV NO. 1 jack. SERIES NO. 2 jack reverses the polarity on SERIES NO. 3 jack and provides the same polarity on SERIES REV NO. 1 jack.

Note. SERIES NO. 3 jack may be used in place of SERIES NO. 2 jack. SERIES NO. 3 jack reverses the polarity on SERIES NO. 2 jack and provides the same polarity on SERIES REV NO. 1 jack.

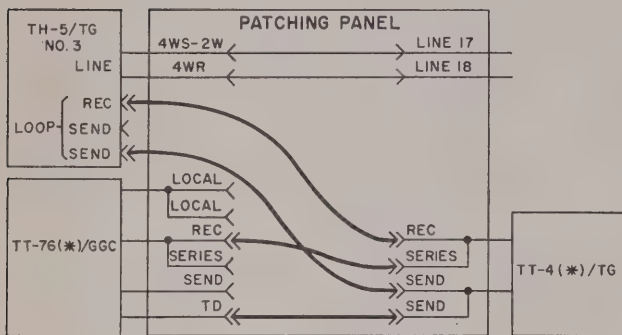
- (2) Insert the plug from the equipment supplying the battery for the dc loop into SERIES REV NO. 1 jack. Equipments connected to SERIES NO. 2 and SERIES NO. 3 jacks will have the same polarity.



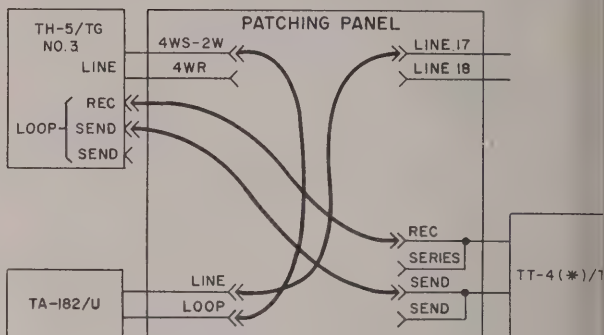
A 2-WIRE OR 4-WIRE HALF-DUPLEX, AND FULL-DUPLEX OPERATION USING TT-4(*)/TG



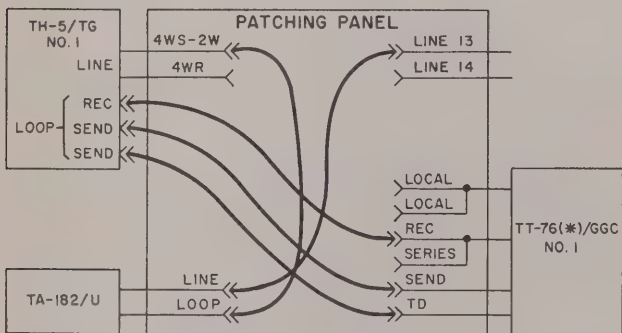
B 2-WIRE OR 4-WIRE HALF-DUPLEX, AND FULL-DUPLEX OPERATION USING TT-76(*)/GGC



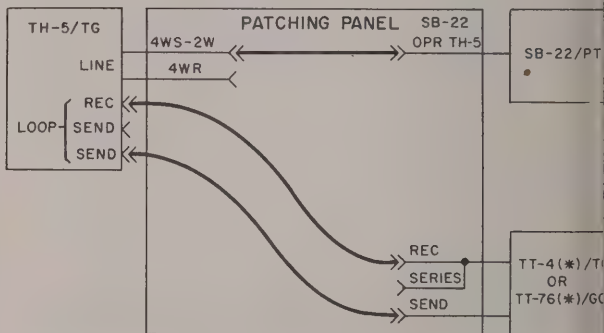
C 2-WIRE OR 4-WIRE HALF-DUPLEX, AND FULL-DUPLEX OPERATION USING TT-4(*)/TG AND TT-76(*)/GGC



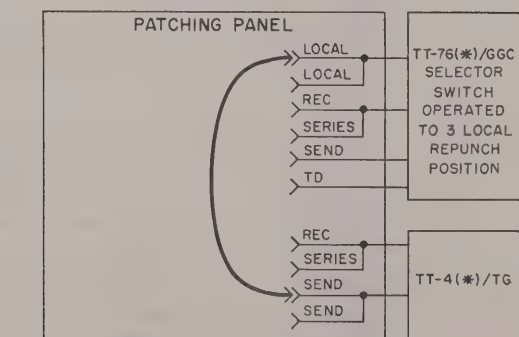
D 2-WIRE HALF-DUPLEX OPERATION USING TT-4(*)/TG TH-5/TG AND TA-182/U



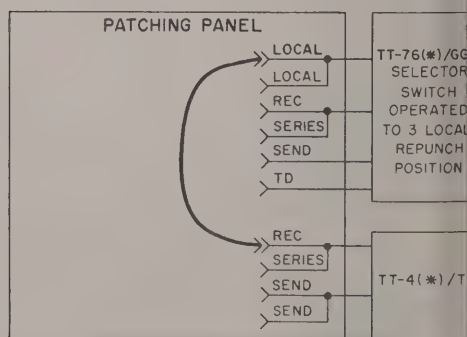
E 2-WIRE HALF DUPLEX OPERATION USING TT-76(*)/GGC, TH-5/TG AND TA-182/U



F ANSWERING SB-22/PT CALLS USING TT-4(*)/TG OR TT-76(*)/GGC AND TH-5/TG



G TAPE PERFORATION ON TT-76(*)/GGC FROM TT-4(*)/TG KEYBOARD



H PAGE PRINTING ON TT-4(*)/TG FROM TT-76(*)/GGC TRANSMITTER-DISTRIBUTOR

TM5815-205-15-2

Figure 20. Patching for teletypewriter operation (nonsecure).

1. Secure Teletypewriter Operation, Patching

When operating Communication Security Equipment, full-duplex (four-wire) or half-duplex (two-wire or four-wire), various operating combinations can be obtained by making patched connections between jacks on the patching panel and jacks on the equipment. The various patches are described in *a* and *b* below. Determine the facilities required and make the necessary connections.

a. Half-Duplex (Two-Wire or Four-Wire) Operation, Using TSEC/KW-9 (fig. 21). To interconnect the TT-4(*)/TG keyboard, the TT-76(*)/GGC NO. 1 transmitter-distributor, the TT-76(*)/GGC NO. 1 reperforator, and the TT-4(*)/TG page printer, proceed as follows:

- (1) Make the following connections between the equipment and the patching panel:

Patching panel jack	Equipment	
	Type No.	Jack
CIPHER 1 TH-5 LOOP SEND.	TH-5/TG NO. 1	LOOP SEND
TT-76 NO. 1 REC.	TH-5/TG NO. 1	LOOP REC

Note. TH-5/TG NO. 1 is connected through normal-rough jacks to lines 13 and 14 (fig. 26).

- (2) Make the following patches at the patching panel:

Patching panel	
From jack	To jack
TT-4 SEND	CIPHER 1 KBD SIG
TT-4 REC	CIPHER 1 PRINTER
TT-76 NO. 1 REC SERIES.	CIPHER 1 TH-5 LOOP REC.
TT-76 NO. 1 TD	CIPHER 1 TD SIG

- (3) To add TT-76(*)/GGC keyboard to the circuit, patch from the TT-76 NO. 1 SEND jack to the TT-4 SEND jack on the patching panel.
- (4) To add TT-76(*)/GGC NO. 2 reperforator to the circuit, patch from the TT-76 NO. 2 REC jack to TT-4 REC SERIES jack on the patching panel.

- (5) To transmit clear text from either transmitter-distributor, operate the associated CIPHER (1 or 2) TEXT switch.

b. Full-Duplex Operation, Using TSEC/KW-9 or SSM-33 (fig. 22). This method of operation uses two Telegraph Terminals TH-5/TG arranged for two-wire operation, one for transmitting and one for receiving. The sending circuit includes the TT-4(*)/TG keyboard, Communication Security Equipment (cipher 1), the transmitter-distributor of TT-76(*)/GGC NO. 1, TH-5/TG NO. 1, the reperforator of TT-76(*)/GGC NO. 1 and line 13. The receiving circuit includes line 14, TH-5/TG NO. 2, Communication Security Equipment (cipher 2), the page printer of the TT-4(*)/TG, and the reperforator of TT-76(*)/GGC NO. 2.

- (1) Make the following connections between the equipment and the patching panel:

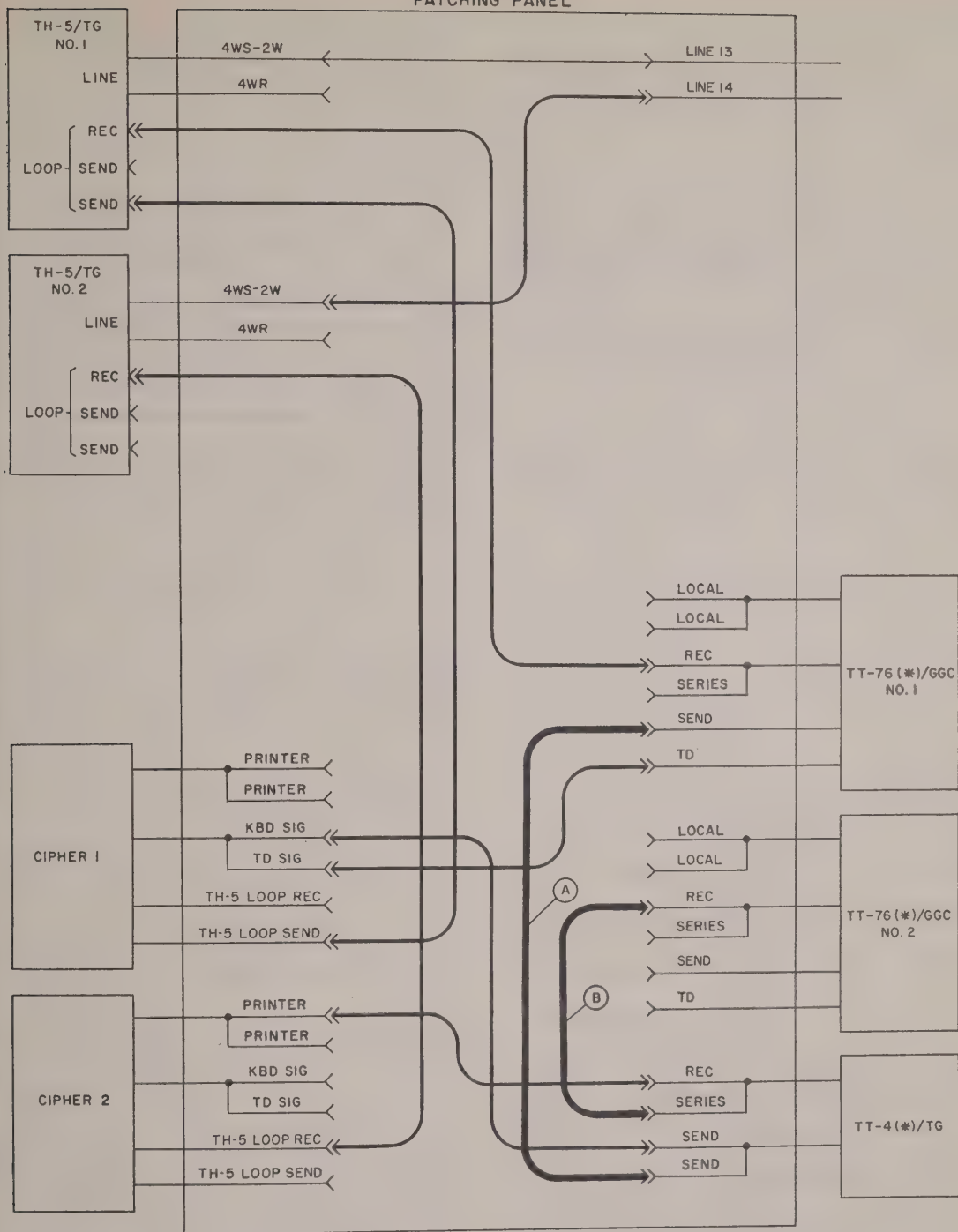
Patching panel jack	Equipment	
	Type No.	Jack
CIPHER 1 TH-5 LOOP SEND.	TH-5/TG NO. 1	LOOP SEND
TT-76 NO. 1 REC.	TH-5/TG NO. 1	LOOP REC
CIPHER 2 TH-5 LOOP REC.	TH-5/TG NO. 2	LOOP REC

- (2) Make the following patches on the patching panel:

Patching panel	
From jack	To jack
TT-4 SEND	CIPHER 1 KBD SIG
TT-4 REC	CIPHER 2 PRINTER
LINE 14	TH-5 LINE 2 4WS 2W
TT-76 NO. 1 TD	CIPHER 1 TD SIG

- (3) To add TT-76(*)/GGC keyboard to the circuit, patch from the TT-76 NO. 1 SEND jack to the TT-4 SEND jack on the patching panel.
- (4) To add TT-76(*)/GGC reperforator to the circuit, patch from the TT-76 NO. 2 REC jack to the TT-4 REC SERIES jack on the patching panel.

PATCHING PANEL



LEGEND:

- INDICATES PATCHED CONNECTIONS REQ'D FOR TT-4(*)/TG KEYBOARD AND TD SENDING, TAPE LINE MONITOR AND PAGE RECEIVING.
- INDICATES PATCHED CONNECTION REQ'D TO ADD TT-76(*)/GGC KEYBOARD SENDING.
- INDICATES PATCHED CONNECTION REQ'D TO ADD TT-76(*)/GGC REPERFORATOR RECEIVER.

TM5815-205-15-22

Figure 22. Full-duplex operation, using TSEC/KW-9 or SSM-33.

51. Power Transfer

After one of the power units has been in operation for 4 hours or if the power unit begins to make unusual noises, follow the procedures given below:

- a. Start the standby power unit (TM 11-900A).
- b. When the standby power unit is running properly, operate the POWER SUPPLY switch on the switchbox to the standby power unit (No. 1 to No. 2 or No. 2 to No. 1).
- c. Stop the power unit and perform the service procedures (TM 11-900A).

52. Stopping Procedures

- a. *Emergency.* To turn the power off in an emergency, operate the MAIN circuit breaker to the OFF position.
- b. *Normal.*
 - (1) Operate the following switches and circuit breakers to their OFF positions.

Circuit breaker or switch	Location
BLOWER 1 or BLOWER 2.	POWER DISTRIBUTION PANEL (fig. 13)
NEON	Ac power duct (fig. 9)
FLUORESCENTS	Ac power duct
OFF-HEAT-FAN ONLY	Heater (TM 11-5805-204-15)
OPR POS	POWER DISTRIBUTION PANEL.
HEATER	POWER DISTRIBUTION PANEL.
LIGHTS	POWER DISTRIBUTION PANEL.
OVERLOAD	POWER DISTRIBUTION PANEL.
MAIN	POWER DISTRIBUTION PANEL.

- (2) Stop the power units in the generator set (TM 11-900A).

53. Operation Under Unusual Conditions

The AN/MGC-17 is designed to meet conditions of extreme cold and hot climates. The

shelter offers complete protection from the elements to personnel and equipment; however, if the SIGNAL & POWER ENTRANCE box or the SIGNAL BINDING POST box of the shelter and the power terminals of the generator are exposed to adverse conditions, the following precautions are necessary.

a. *Cold Climates.* Extreme cold causes cables and wires to become hard, brittle, and difficult to handle. Be careful when handling the cables and connecting them to equipment so kinks and unnecessary loops will not result in permanent damage. Insure that binding posts, receptacles and connectors are free of frost, snow, and ice by replacing the covers over the connectors and receptacles and closing the cover over the SIGNAL & POWER ENTRANCE and the SIGNAL BINDING POST boxes when they are not in use. Replace the connector or receptacle cover as soon as it is disconnected from the equipment. Never drag or place an open connector or receptacle in the snow. Teletypewriter and Communication Security Equipment will not function effectively if temperature is below 30° F. Energize the ac circuits (par. 43), turn the HEATER switch to ON, and heat the shelter sufficiently before operating the equipment.

Warning: Be sure that the shelter is always properly ventilated.

b. *Hot Climates.* In hot, dry climates, the connectors, receptacles, and binding posts are subject to damage from dirt and dust. Cover the SIGNAL & POWER ENTRANCE and the SIGNAL BINDING POST boxes when they are not in use and replace the covers over the connectors and receptacles. Never drag or place an open connector or receptacle on the ground.

c. *Warm Damp Climates.* In warm, damp climates, the equipment is subject to damage from moisture and fungus. Wipe all moisture and fungus from the exterior of the equipment with a lint-free cloth. Follow the recommendations given in b above.

CHAPTER 3

MAINTENANCE

4. Scope of Maintenance

The operator must clean and inspect all components of Teletypewriter Central Office AN/GC-17 regularly to keep them in good working condition. Detailed preventive maintenance procedures pertaining to the major components are described in the appropriate technical manuals or technical bulletin (app. I). The maintenance allocation chart (app. II) indicates the maintenance function to be performed at different echelons.

a. Use a clean, dry, lint-free cloth or brush for dusting.

b. For cleaning, if necessary, moisten the cloth or brush with Cleaning Compound (Federal stock No. 7930-395-9542); after cleaning, wipe dry with a cloth.

Warning: Prolonged breathing of fumes from Cleaning Compound is dangerous. Make certain that adequate ventilation is provided. Cleaning compound is flammable; do not use it near a flame.

c. To clean the electrical contacts, use a cloth moistened in Cleaning Compound and wipe with dry cloth.

d. Dry compressed air not exceeding 60 pounds per square inch may be used to remove dust from inaccessible places.

Warning: Compressed air is dangerous and can cause serious bodily harm. It can also cause mechanical damage to the equipment. Do not use compressed air to dry parts where Cleaning Compound or solvents have been applied.

5. Daily Preventive Maintenance

a. Check for completeness and general condition of the equipment and spare parts.

b. Remove dirt, dust, grease, and moisture from the exposed parts.

c. Remove rust, corrosion, fungus, dirt, and

moisture from binding posts, connectors, and receptacles.

d. Inspect field wire connections to the binding posts for good contact.

e. Inspect the ground rod and the connections to it.

f. Inspect all exposed cables for kinks, strains, moisture, fungus, and loose terminals and frayed, cut, or damaged insulation.

g. Tighten any loose screws.

56. Weekly Preventive Maintenance

a. Clean and tighten components, racks, mountings, installations, cables and connections.

b. Inspect components, racks, mountings, installations, and exposed metal surfaces for rust, corrosion, and moisture.

c. Inspect cables and wires for cuts, breaks, fraying, deterioration, kinks, and strain.

d. Inspect for looseness of accessible items, such as switches, circuit breakers, signal and ac power electrical assemblies, and neon lamps.

e. Inspect meters and clock for damaged glass and cases.

f. Clean air filters, nameplates, meters, and clock.

g. Wind the clock (fig. 6).

h. Inspect the shelter and generator set for support, installation, rust, corrosion, and moisture.

i. Check entrance boxes, blower exhaust, and filter intake covers for cracks, leaks, damaged gaskets, dirt, and grease.

j. Check for normal operation (par. 58).

57. Monthly Cleaning and Lubrication (2d Echelon)

a. Lubricate the locks and latches. Use Grease, graphite, aircraft (GGA) (TM 11-5805-204-15).

b. Lubricate all door hinges. Use lubricating oil, general purpose preservative (PL special),

or lubricating oil, internal combustion engine (OE-10) (TM 11-5805-204-15).

Caution: More frequent lubrication intervals may be required in excessively hot, humid, or dusty areas. Do not overlubricate.

- c. Lubricate all metal-to-metal moving parts.
- d. Lubricate the organizational equipment as described in applicable technical manuals (app. I).
- e. Remove the air filter. Clean the filter with water. Air-dry the filter and replace it in its mounting.

58. Equipment Performance Checklist

The equipment performance checklist is used

by the operator to check the equipment performance systematically. Corrective measures that cannot be performed by the operator are performed by second echelon maintenance personnel as indicated in the check list. Use figures 25 and 26 in performing the corrective measures. When using the checklist, start at the beginning and follow each step consecutively to locate the trouble. If trouble is suspected in a particular area, start checking at that point and continue the steps in sequence. THE CHECKLIST COVERS ONLY THE AN/MC-119; when a fault or condition is localized to a major component, refer to the applicable technical manual (app. I). Operate the equipment as follows:

Item No.	Item	Action	Normal indications	Corrective measures
1	All switches and circuit breakers.	Operate to OFF.		
2	POWER SWITCH on switch box (generator set).	Operate to No. 1 or No. 2 as applicable.		
3	Power unit	Start (TM 11-900A).		
4	MAIN circuit breaker on POWER DISTRIBUTION PANEL.	Operate to ON.		
5	Voltmeter on POWER DISTRIBUTION PANEL.	Use flashlight and read	Voltmeter indicates 115 volts $\pm 10\%$.	Reset the MAIN circuit breaker to OFF and then to ON. Check circuit breaker CB8; replace if defective (second echelon). Check the connections of the power cable and power stub. Check the position of the switch on switch box. Change power cable or power stub (second echelon). Check to see that all other circuit breakers on the POWER DISTRIBUTION PANEL are at OFF. Check all circuit breakers; replace if defective (second echelon).
6	Ammeter on POWER DISTRIBUTION PANEL.	Use flashlight and read	Ammeter indicates zero	If one or more, but not all, of the lights fail to go on, replace the faulty light or starter. If all lamps fail to light, check wiring; check circuit breaker CB1; replace if defective (second echelon). Check switches S4, S5, and S6; replace if defective (second echelon). Check microswitch and NORMAL-BLACKOUT switch; replace if defective (second echelon). Check microswitch; replace if defective (second echelon). Check NORMAL-BLACKOUT switch; replace if defective (second echelon).
7	LIGHTS circuit breaker 1 on POWER DISTRIBUTION PANEL.	Operate to ON Operate NORMAL-BLACKOUT switch to NORMAL. Operate the NEON and FLUORESCENTS switches to ON.	Ammeter indicates approximately 2 amperes. Neon lamp over LIGHTS circuit breaker lights. NEON and FLUORESCENTS lights go on. Lights remain on Lights go out	
		Depress door microswitch and operate NORMAL-BLACKOUT switch to BLACKOUT. Release door microswitch Operate NORMAL-BLACKOUT switch to NORMAL.		

P R E P A R A T O R Y

Item No.	Item	Action	Normal indications	Corrective measures
8	CONVENIENCE RECEPTACLE circuit breaker 5 on POWER DISTRIBUTION PANEL.	Operate to ON----- Check each convenience outlet with the extension lamp. Operate circuit breaker 5 to OFF. Operate to ON----- Caution: Vent of the blower must be open. Operate BLOWER 1 circuit breaker to OFF.	Neon lamp above circuit breaker lights. Ammeter indicates approximately 2 amperes. Extension lamp lights----- Neon lamp lights----- Ammeter indicates approximately 4 amperes. Blower operates-----	Replace neon lamp. Check outlet with meter; replace if defective (second echelon). Neon lamp does not light but blower operates, replace the neon lamp. Reset circuit breaker to OFF and then to ON. If ammeter reads steadily above 6 amperes, check blower motor; replace if defective (second echelon).
10	BLOWER 2 circuit breaker 4 on POWER DISTRIBUTION PANEL.	Repeat procedures listed for item No. 9.		
11	HEATER circuit breaker 6 on POWER DISTRIBUTION PANEL.	Insert heater power cord plug into its ac duct receptacle. Operate HEATER circuit breaker 6 to ON. Operate heater switch to HEAT. Operate the OFF-HI-MED-LO switch to desired position. Operate heater switch to OFF. Operate OFF-HI-MED-LO switch to OFF; operate HEATER circuit breaker 6 to OFF.	Neon lamp above HEATER circuit breaker 6 lights. Heater fan operates and heat is circulated. When room temperature rises to thermostat temperature setting, heat will cut off.	Replace faulty lamp. Press reset button on heater. Check for defective switch or heating element; replace defective part (second echelon).

EQUIPMENT PERFORMANCE		STOPPING	
13	Organizational equipment-----	Perform the stopping procedures as described in the appropriate technical manuals (app. I). Operate TH-5 NO. 1 through TH-5 NO. 3 switches to OFF. Operate TA-182 NO. 1 through TA-182 NO. 6 switches to OFF. Operate OPR POS circuit breaker 2 to OFF. Perform the stopping procedures (par. 52).	Operate TH-5 NO. 1, through TH-5 NO. 3 switches to ON. Operate TA-182 NO. 1, through TA-182, NO. 6 switches to ON. Operate the equipments as described in the appropriate technical manuals (app. 1).
	14 Shelter -----		Neon lamps TH-5 NO. 1, TH-5 NO. 2, and TH-5 NO. 3 light. Neon lamps TA-182 NO. 1 through TA-182 NO. 6 light.
			Replace faulty lamp. Replace faulty lamp.

59. Replacement of Shelter Cables (Wiring Harness) (Fourth Echelon)

The signal wiring of the AN/MGC-17 consists of one 26-pair cable between the 26-pair receptacle in the SIGNAL & POWER ENTRANCE box and the binding posts in the SIGNAL BINDING POSTS box, one 14-pair cable between the SIGNAL BINDING POSTS box and the switchboard, and one 14-pair cable between the patching panel and the VF ringers numbered 1, 2, 3, and 4 (fig. 26). The two 14-pair cables are contained in the signal duct. Authorized replacement cables *ARE NOT* identical with those originally furnished in the shelter. Replacement procedures are covered in *a* below; color coding of the *replacement* cables is given in *b* below.

a. Replacement of Interior Cables. The interior cables should *not* be replaced when only one or two pairs have become defective. Use the spare pairs as replacement for the defective pairs.

- (1) If the spare pairs have been used previously and the defect can be located, repair the defect by splicing. If the entire cable is accidentally cut or damaged beyond repair, or if a cable has been repaired previously and there is not enough slack to permit another repair, replace the cable.
- (2) To install a replacement cable, first disconnect the defective cable and remove it from the ducts. Cut the new cable to the proper length (same as cable removed), secure it in the ducts. Connect the new cable; use the color code given in *b* below.
- b. Cable Color Coding.* The chart in (1) below compares the color code of each pair of original 14-pair cabling to the corresponding pairs in the authorized replacement cable; chart in (2) below compares the color code of the original 26-pair cabling with the authorized replacement cable. Refer to figure 26 for terminal points of the replacement cables.

(1) Color coding, 14-pair cabling.

Pair No.	Original cable color code		Replacement cable color code	
	Tip	Ring	Tip	Ring
1	White	Yellow	White	Blue
2	White	Orange	White	Orange
3	White	Black	White	Green
4	White	Pink	White	Brown
5	White	Light brown	White	Gray (slate)
6	White	Dark brown	Red	Blue
7	White	Silver	Red	Orange
8	White	Dark green	Red	Green
9	White	Light green	Red	Brown
10	White	Violet	Red	Gray (slate)
11	White	Gray (slate)	Black	Blue
12	White	Light blue	Black	Orange
13	White	Dark blue	Black	Green
14	Black	Pink	Black	Brown

(2) Color coding, 26-pair cabling.

Pair No.	Original cable color code		Replacement cable color code	
	Tip	Ring	Tip	Ring
1	White	Yellow	White	Blue
2	White	Orange	White	Orange
3	White	Black	White	Green
4	White	Pink	White	Brown
5	White	Light brown	White	Gray (slate)
6	White	Dark brown	Red	Blue
7	White	Silver	Red	Orange
8	White	Dark green	Red	Green
9	White	Light green	Red	Brown
10	White	Violet	Red	Gray (slate)
11	White	Gray (slate)	Black	Blue
12	White	Light blue	Black	Orange
13	White	Dark blue	Black	Green
14	Black	Silver	Black	Brown
15	Black	Gray (slate)	Black	Gray (slate)
16	Black	Light brown	Yellow	Blue
17	Black	Dark brown	Yellow	Orange
18	Black	Yellow	Yellow	Green
19	Black	Light blue	Yellow	Brown
20	Black	Dark blue	Yellow	Gray (slate)
21	Black	Light green	Violet	Blue
22	Black	Dark green	Violet	Orange
23	Black	Orange	Violet	Green
24	Black	Violet	Violet	Brown
25	Black	Pink	Violet	Gray (slate)
26	Dark blue	Pink	White	Red

CHAPTER 4

THEORY

60. General

Teletypewriter Central Office AN/MGC-17 contains facilities for 3 voice-frequency teletypewriter circuits which may be operated full-duplex or half-duplex. It also provides facilities for switching 12 lines of telegraph. Two of these lines are equipped with VF ringers. Four additional ringers are provided for use as required. All signal and power connections are made on the outside of the shelter. Cables from the switchboard and patching panel are connected to the binding posts, which are in parallel with the 26-pair connector. Wiring, for both signal and ac power, is contained in metal ducts. Ac power in the shelter is controlled at the POWER DISTRIBUTION PANEL. For the theory of operation on blowers, heater, and drop-line box, refer to TM 11-5805-204-15.

61. Modification of TT-76(*)/GGC Transmitter-distributor

(figs. 23 and 24)

The use of Communication Security Equipment in the AN/MGC-17 requires a modification to the transmitter-distributor of Teletypewriter Reperforator-Transmitter TT-76(*)/GGC (par. 26a). When this modification is accomplished (par. 26a), the energizing of the clutch magnet is under the direct control of the communication security equipment.

62. Signal Circuits

(figs. 25 and 26)

All incoming and outgoing signals are connected at either the SIGNAL & POWER ENTRANCE box or the SIGNAL BINDING POSTS box. From the SIGNAL & POWER ENTRANCE box, the incoming signals are applied through the SIGNAL BINDING POSTS box to the jack field sections of the switchboard and the patching panel.

a. Trunk and Local Circuits. The circuits of the AN/MGC-17 are made up of both trunk and local lines (par. 44). Trunk lines are usually provided from the patching panel in AN/MGC-17 to the SB-611/MRC. Local circuits are usually connected through the SIGNAL BINDING POSTS box to the switchboard.

b. Battery Supply. The NIGHT ALARM BATTERY box located below the switchboard supplies current for operating the night alarm buzzer and the switchboard panel lamps.

c. Cable and Connector Circuit Assignment. The 26-pair receptacle designated SIGNAL 1 is wired to binding posts 1 through 18 and 26, with pairs 19 through 25 left as spares. The 26-pair receptacle contacts are in two groups; male and female. Each group is divided into A sleeve and B tip section. The contacts on the 26-pair receptacle are interconnected so that 1A male connects to 1A female. All the contacts in section A male connect to the corresponding numbered contacts in A female. The same applies in the B section of the receptacle. One 14-pair cable connects the binding posts to the switchboard. The other 14-pair cable connects the patching panel to VF ringers 1 through 4.

d. Special Circuits. Telephone Set TA-3 PT can be connected through pair 26 of SIGNAL 1 receptacle or through LB PHONE binding posts in the SIGNAL BINDING POSTS box to provide intershelter communication. In the SIGNAL BINDING POSTS box, two additional pairs of binding posts provide entry of local circuits into the shelter. These pairs of binding posts, designated A and B, together with the SIGNAL 1 pair 26 binding posts, are terminated in the JACK & BINDING POSTS panel.

63. Ac Power

(fig. 27)

a. Power Supply. All electrical equipment

CHAPTER 4

THEORY

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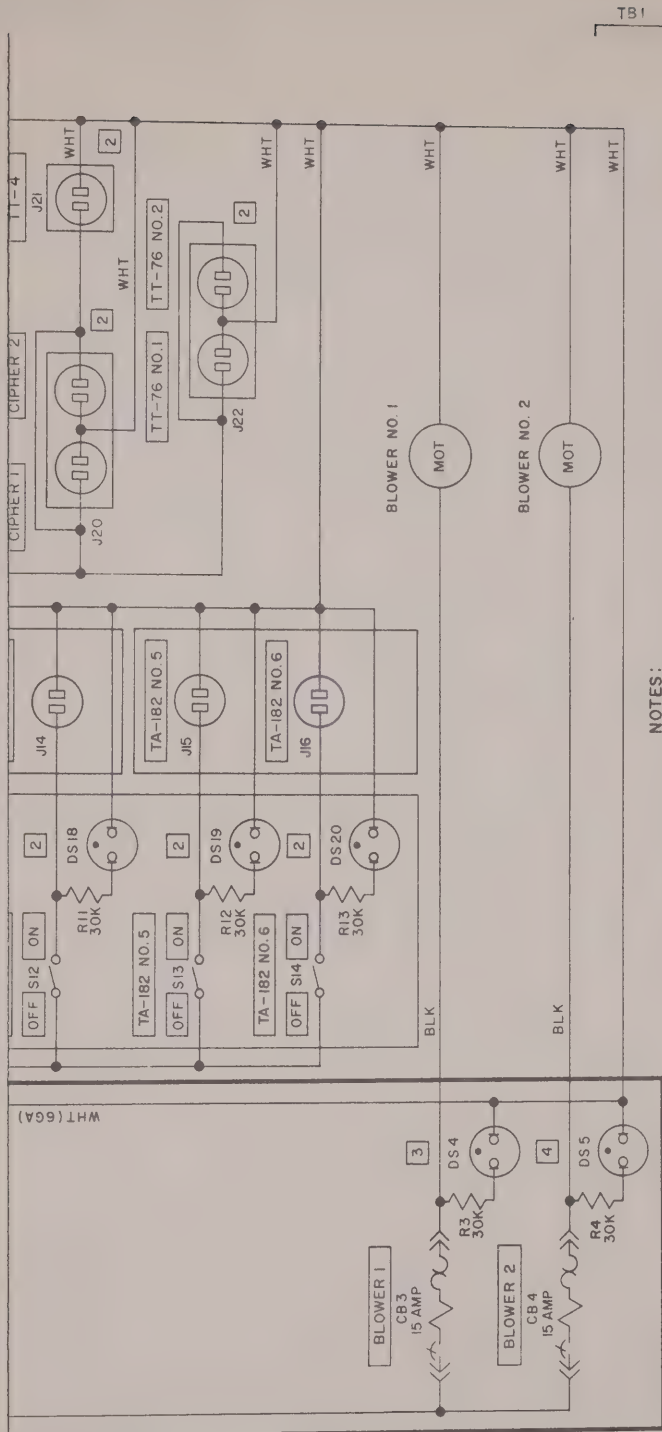
d. Special Circuits. Telephone Set TA-31 PT can be connected through pair 26 of SIGNAL 1 receptacle or through LB PHONE binding posts in the SIGNAL BINDING POSTS box to provide intershelter communication. In the SIGNAL BINDING POSTS box, two additional pairs of binding posts provide entry of trunk and local circuits into the shelter. These pairs of binding posts, designated A and B, together with the SIGNAL 1 pair 26 binding posts, are terminated in the JACK & BINDING POSTS panel.

63. Ac Power

(fig. 27)

a. Power Supply. All electrical equipment



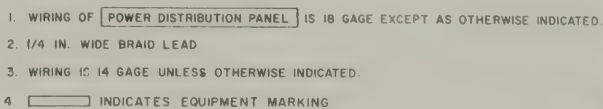


NOTES:

1. WIRING OF POWER DISTRIBUTION PANEL IS 18 GAGE EXCEPT AS OTHERWISE INDICATED.
2. 1/4 IN. WIDE BRAID LEAD.
3. WIRING IS 14 GAGE UNLESS OTHERWISE INDICATED.
4. INDICATES EQUIPMENT MARKING

TM5815-205-15-27

Figure 27. Ac power schematic-wiring diagram.



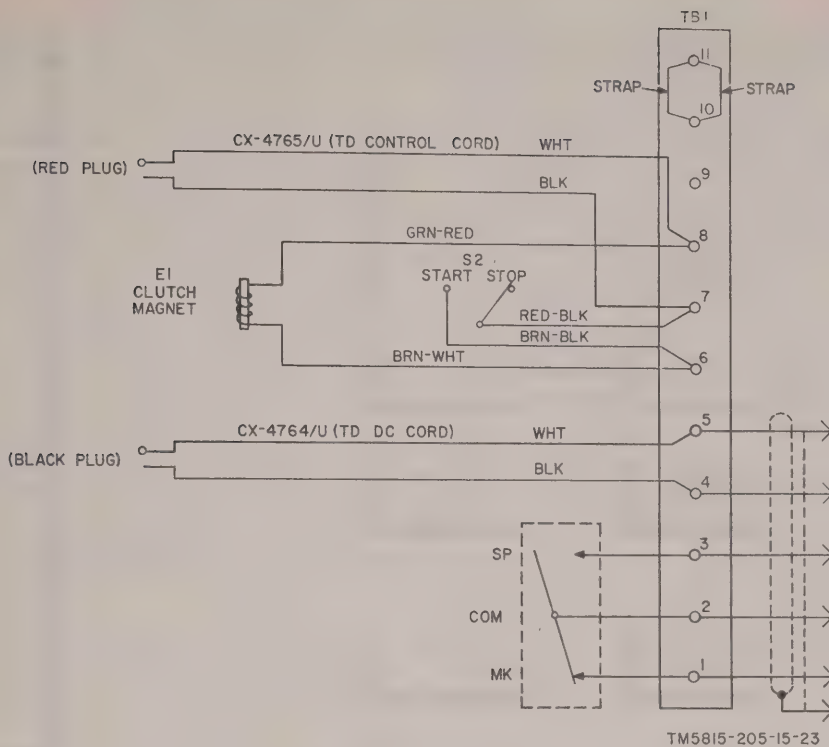


Figure 23. Teletypewriter Reperforator-Transmitter TT-76/GGC modification, schematic-wiring diagram.

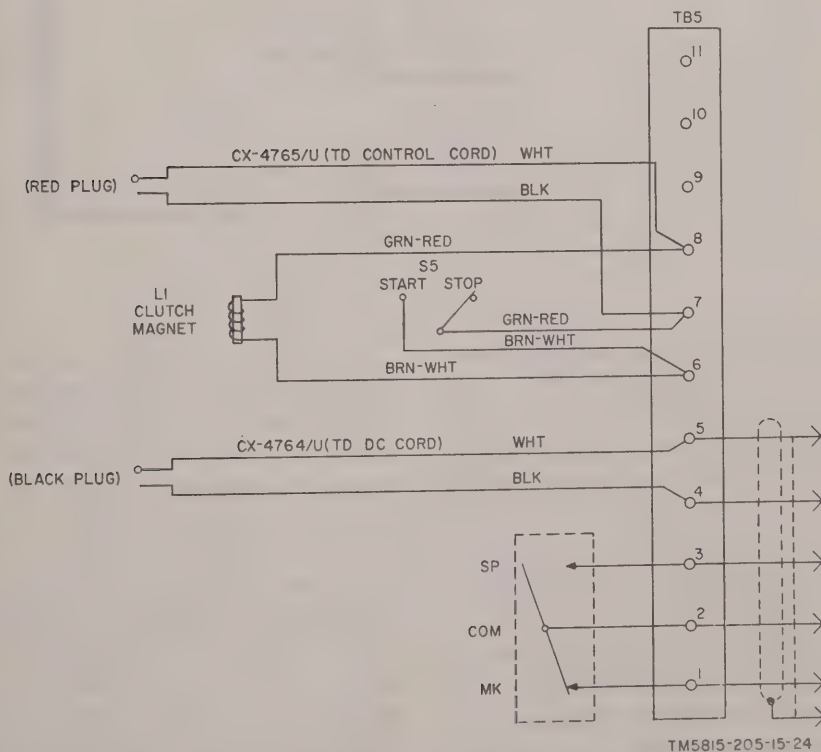


Figure 24. Teletypewriter Reperforator-Transmitter TT-76A/GGC modification, schematic-wiring diagram.

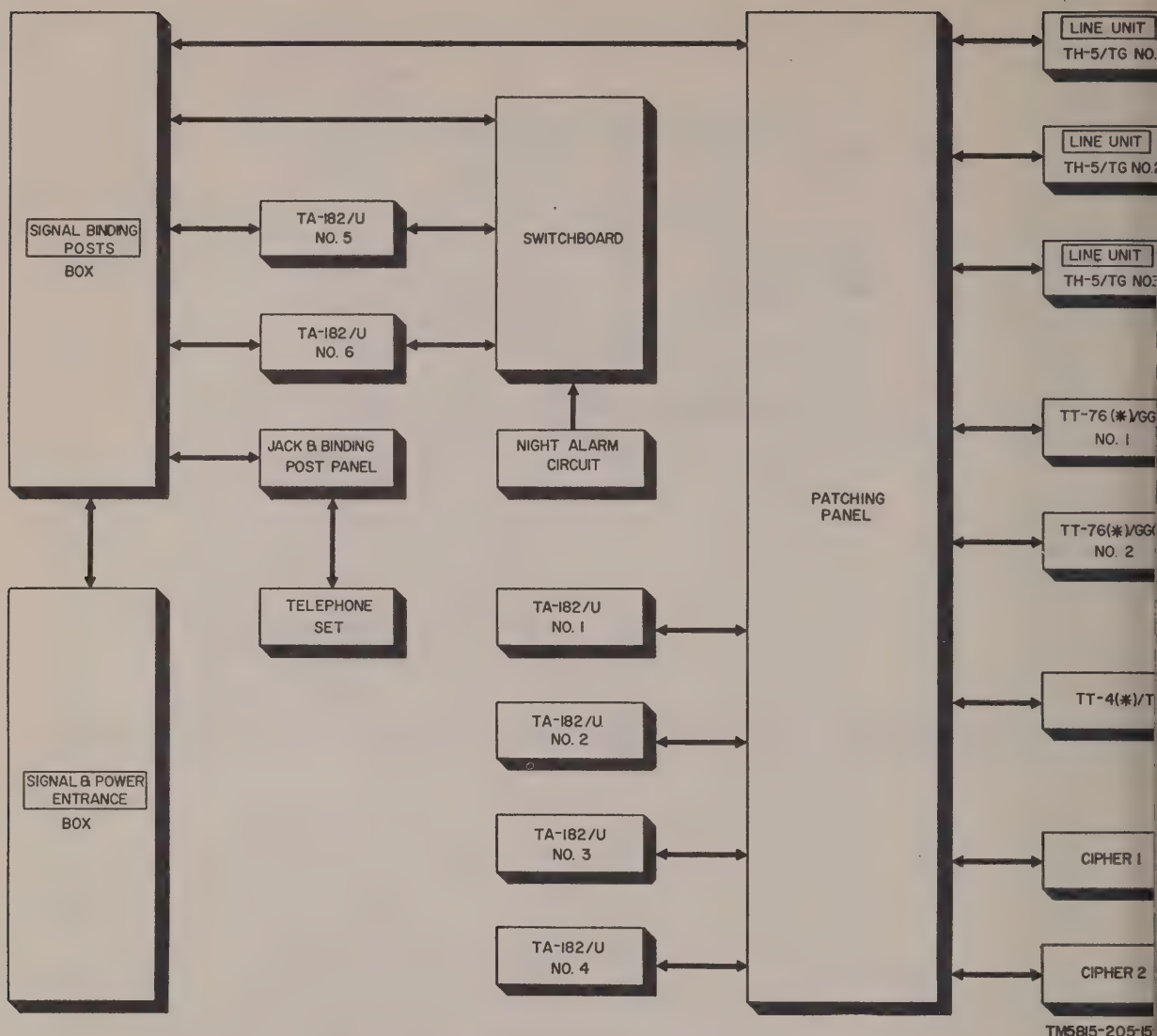


Figure 25. AN/MGC-17, signal block diagram.

the AN/MGC-17 is powered by either of two power units. Power from the generator set is connected into a switchbox. The switch box has switching facilities to select the output of either power unit. From the switchbox, power is connected to the **SIGNAL & POWER ENTRANCE** box. Power may also be obtained from a commercial source. For connection to a commercial source, refer to paragraph 42.

b. Main Power Circuit. **POWER OUT** receptacle J7 is wired in parallel with **POWER IN** receptacle J6 so another shelter may be connected to the same generator if the output (2,500 watts) of the generator is not exceeded. Power is applied through ducts to the **POWER DIS-**

TRIBUTION PANEL. In the **POWER DISTRIBUTION PANEL**, current flows through double-pole **MAIN** circuit breaker CB8 to a meter M1 and to voltmeter M2. Power is distributed to the different circuits through circuit breakers. Each circuit has an indicating lamp connected in parallel with the circuit breaker. The power input to the shelter is not sufficient to enable all equipment to operate simultaneously. Therefore, to protect the power unit, a 15 ampere **OVERLOAD** circuit breaker CB7 is provided on the **POWER DISTRIBUTION PANEL**. **OVERLOAD** circuit breaker CB7 cuts off power to the **HEATER** and **CONVENIENCE RECEPTACLE** if the circuits become over-

aded, thus avoiding any interruption of power to the organizational equipment.

c. *Voltmeter and Ammeter.* Voltmeter M2, red across the ac input circuit, indicates the voltage applied to the AN/MGC-17. It has a 150-volt full-scale deflection with a red line at 115 volts. Ammeter M1 indicates the total alternating current being used in the AN/MGC-17. It has a 0-50-ampere full-scale deflection scale. A current transformer with a ratio of 10 to 1 is used to couple the ammeter to the ac input. Its secondary is connected to the ammeter. Its primary, consisting of 3 turns of wire, is between MAIN circuit breaker CB8 and the individual circuit breakers. With 50 amperes flowing in the line, 5 amperes will flow in the secondary of the transformer and the meter will deflect to full scale.

d. *Tributary Power Circuits.* Individual circuit breakers CB3 and CB4, which are also used for ON-OFF switches, are provided for each

blower. Two duplex convenience receptacles connected in parallel, one in the SIGNAL & POWER ENTRANCE box and the other inside the shelter, are protected from overload by circuit breaker CB5. A separate circuit breaker, CB6, is provided for the heater because of the amount of current it draws. The heater is not required when the organizational equipment is operating.

e. *Lamp and Equipment Circuits.* NORMAL-BLACKOUT switch S5, wired in parallel with door microswitch S4, controls the flow of current to the light and fluorescent lamps. NEON lamp DS13 has its own ON-OFF switch, S7. With the NORMAL-BLACKOUT switch at BLACKOUT, current flows through switch S4. When the door is opened, switch S4 opens and current cannot flow to the lamps. When the NORMAL-BLACKOUT switch is at NORMAL, current flows through this switch and bypasses switch, S4.

CHAPTER 5

SHIPMENT AND LIMITED STORAGE, TRANSPORTATION, AND DEMOLITION

Section I. SHIPMENT AND LIMITED STORAGE, TRANSPORTATION

64. Disassembly of Equipment

When Teletypewriter Central Office AN/MGC-17 is to be moved to a different location, perform the following operations:

a. Turn off all ac power switches and circuit breakers except the FLUORESCENTS switch, the LIGHTS circuit breaker, and the MAIN circuit breakers.

b. Remove the KWK-9/TSEC, KWA-7/TSEC, and applicable keying materials and store them in the TSEC/KW-9 accessory case. Turn them over to the accountable officer for secure transit to next location. The KWB-9/TSEC may be left in the shelter during transit.

c. Fasten the telephone set in its mounting (fig. 7).

d. Fasten the wastepaper basket in its holder (fig. 8).

e. Secure the heater in its mounting (fig. 10).

f. Collect the miscellaneous components and place them in the ACCESSORIES & SPARES cabinet in the shelter.

g. Secure the chairs (fig. 6).

h. Check to see that everything is fastened in position.

i. Disconnect the 26-pair cable in the SIGNAL & POWER ENTRANCE box, and replace the covers on the receptacles and connectors (par. 45).

j. Wind the 26-pair cables on the cable reel.

k. Install the cable reel in the shelter (fig. 10), leaving space for the power cable reel at the rear:

- (1) Position the cable reel in the shelter with the center of the hub directly over the mounting plate on the floor.
- (2) Remove the cable reel holder from its mounting, engage the stud with the

reel hub and mounting plate, and tighten the holder.

l. Operate the FLUORSCENTS switch, LIGHTS circuit breaker, and the MAIN circuit breaker to OFF.

m. If the power was obtained from the generator set, proceed as follows:

- (1) Stop the generator set (TM 11-900).
- (2) Disconnect the power cable, power stub, and ground lead from the switchbox, and replace the covers on the receptacles and connectors.
- (3) Secure the switchbox in its mounting (fig. 10) in the shelter.

n. If the power was obtained from a commercial source, proceed as follows:

- (1) Remove the power from the source terminals.
- (2) Disconnect the power stub from commercial source.
- (3) Disconnect the junction box from power cable and power stub, and place the cover on the junction box on both cables.
- (4) Mount the junction box in its bracket (fig. 9).

o. Disconnect the power cable from POWER IN receptacle in the SIGNAL & POWER ENTRANCE box, and replace covers on the connector and receptacle.

p. Disconnect the ground leads from the GND lug on the switchbox and the GRD lug in the SIGNAL & POWER ENTRANCE box.

q. Close and secure the covers of the SIGNAL & POWER ENTRANCE and SIGNAL BUILDING POSTS boxes with the wing fasteners.

r. Disconnect the ground leads from the shelter and generator set ground rods and st

ne lead in the ACCESSORIES box of the trailer and the other in the ACCESSORIES & SPARES cabinet in the shelter (fig. 6).

s. Remove the ground rods from the ground and install them in their mountings in the shelter (fig. 7) and trailer (TM 11-5805-204-5).

t. Wind the power stubs first and then the power cable on a cable reel.

u. Install the power cable reel next to the 6-pair cable reel (*k* above) in the shelter.

v. Place the ladder on top of the cable reels and secure it to the reels with the web straps.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

66. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 67 will be used to prevent further use of the equipment. Demolition instructions for the Communication Security Equipment are included in their appropriate publications (app.).

67. Methods of Destruction

Use any or all of the following methods to destroy the equipment.

a. *Smash*. Smash the controls, tubes, coils, relays, switches, capacitors, transformers, and

w. Inspect the area around the shelter and trailer for loose items. Be sure that all items are properly stored.

x. Close and secure the blower vents, air filter cover, and message box cover.

y. Close the door and lock it.

65. Transportation

The shelter can be transported to another site either by truck or by helicopter. To load the shelter onto a truck or lift it by helicopter, refer to paragraph 39.

meters; use sledges, axes, handaxes, pickaxes, hammers, or crowbars.

b. *Cut*. Cut all cables and cords and slash the wiring on the components; use axes, handaxes, or machetes.

c. *Burn*. Burn cords and technical manuals; use gasoline, kerosene, oil, flame throwers, or incendiary grenades.

d. *Bend*. Bend panels and cabinets.

e. *Explode*. If explosives are necessary, use firearms, grenades, or TNT.

f. *Dispose*. Bury or scatter the destroyed parts in slit trenches or foxholes, or throw them into streams.

APPENDIX I

REFERENCES

The following applicable references are available for the operator and installer of Teletypewriter Central Office AN/MGC-17.

TM 11-2225	Teletypewriter Sets AN/GGC-3 and AN/GGC-3A and Teletypewriter perforator-Transmitters TT-76/GGC, TT-76A/GGC, and TT-76B/GGC.
TM 11-2202	Manual Telephone Switchboard SB-22/PT.
TM 11-5815-206-12	Operation and Organizational Maintenance Teletypewriter Set AN/PGC and Teletypewriters TT-4A/TG, and TT-4B/TG.
TM 11-2137	Telegraph-Telephone Signal Converter TA-182/U.
TM 11-2239	Telegraph-Telephone Terminal AN/TCC-14.
TM 11-900A	Power Unit PE-75-AF.
TM 11-2155	Telephone Set TA-312/PT.
TM 11-5805-204-15	Operator's, Organizational, Field, and Depot Maintenance Manual Communication Patching Panel SB-611/MRC.
KAM-10/TSEC	Repair and Maintenance Instructions for TSEC/KW-9.
KAO-33/TSEC	Operation of TSEC/KW-9.
KAO-8/TSEC	Pythom Operation.
TB SIG 340	Communication Security Equipment TSEC/KW-9 (U).

APPENDIX II

MAINTENANCE ALLOCATION CHART

General

a. The maintenance allocation chart assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are defined as follows:

(1) *Part or component*. Only the nomenclature or standard item name is given in this column. Additional descriptive information is included only where clarification is necessary to identify the part. Components and parts comprising a major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.

(2) *Maintenance function*. This column indicates the various maintenance functions allocated to the echelon capable of performing the operation. These are defined as follows:

(a) *Service*. To clean, to preserve, and to replenish fuel and lubricants.

(b) *Inspect*. To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(c) *Test*. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(d) *Replace*. To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

(e) *Repair*. To restore to a serviceable condition by replacing unserviceable parts or by any other action required utilizing tools, equipment, and skills available, to include welding, grind-

ing, riveting, straightening, adjusting, etc.

(f) *Rebuild*. To restore to a condition comparable to new by disassembling the item to determine the condition of its component parts and reassembling it using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

(3) *1st, 2d, 3d, 4th, 5th echelon*. The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

(4) *Tools required*. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks*. Entries in this column are used to clarify data in the other columns.

c. Columns in the allocation of tools for maintenance function chart are defined as follows:

(1) *Tools required for maintenance functions*. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *1st, 2d, 3d, 4th, 5th echelon*. A dagger (†) symbol indicates the echelons allocated the facility.

(3) *Tool code*. This column lists the tool code assigned.

- (4) *Remarks.* Entries in this column are used to clarify data in the other columns.

2. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

3. Mounting Hardware

The basic entries of this maintenance allocation chart do not include mounting hardware such as screws, nuts, bolts, washers, brackets, clamps, etc.

4. References

Additional instructions concerning maintenance of this equipment are contained in:

TM 11-3895-202-12P, Operators and Organizational Maintenance Repair Parts and Spe-

cial Tools List and Maintenance Allocation Chart for Reel Unit RL-31-B-C-D and E.

TM 11-5805-247-12P, Operator's and Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Converter, Telegraph-Telephone Signal TA-182/U.

TM 11-5805-246-12P, Operator's and Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Terminal, Telegraph TH-5/TG.

TM 11-5805-262-20P, Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Switchboard, Telephone, Manual SB-22/PT.

TM 11-5815-206-12P, Operator's and Organizational Maintenance Repair Parts and Special Tools List for Teletypewriter Set A PGC-1.

TM 11-5815-238-12P, Operator's and Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart for Teletypewriter Set AN/GGC-3 and AN/GGC-3A.

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH.	(4) 2ND ECH.	(5) 3RD ECH.	(6) 4TH ECH.	(7) 5TH ECH.	(8) TOOLS REQUIRED	(9) REMARKS
TELETYPEWRITER CENTRAL OFFICE AN/MGC-17	service	X	X					Interior
	inspect		X				2, 3	Exterior
	test		X				1	Interior and exterior
	repair		X				2, 3	Continuity
	rebuild		X			X	2, 3	
BATTERY BOXES	replace		X		X			Fabricate
	repair		X					
CAPS, ELECTRICAL	replace		X					
POSTS, BINDING	replace		X					
RECEPTACLE, TURNLOCK, FASTENER	replace		X					
SPACERS, SLEEVE	replace		X					
BOX, MESSAGE, ASSEMBLY	replace				X			Fabricate
RECEPTACLES, TURNLOCK FASTENER	replace		X					
BRACKETS, and HOLDERS	replace				X			Fabricate
BULLETIN BOARD	repair				X			Fabricate
BUZZERS	replace		X					
CABINETS, STORAGE	replace				X			Fabricate
CABLE ASSEMBLIES	repair		X					
BAND, MARKER, CABLE	replace			X				Fabricate
CABLE	replace		X					
CONNECTORS	replace		X					
	repair							Separate MAC for 26 pair connectors
TERMINAL LUGS (for Power Cable)	replace		X					
CLOCK, WALL	replace		X					
CONDUIT ASSEMBLIES	repair		X					
BALLASTS, LAMP	replace		X					
BUSHINGS, ELECTRICAL CONDUCTOR	replace		X					
CAPACITORS	replace		X					
CLIPS, SPRING TENSION	replace		X					
CONNECTORS, RECEPTACLE, ELECTRICAL	replace		X					
GLOBES, ELECTRIC LIGHT	replace		X					
HOLDERS, LAMPHOLDER	replace				X			Fabricate
INSULATORS, BUSHING	replace		X					

(3)

(6)

(7)

(4)

(5)

(2)

(1)

PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH.	2ND ECH.	3RD ECH.	4TH ECH.	5TH ECH.	TOOLS REQUIRED	REMARKS
AN/MGC-17 (continued)								
JACKS, TELEPHONE	replace		X					
LAMP HOLDERS	replace		X					
LAMPS	replace	X						
POSTS, BINDING	replace		X					
STARTERS, LAMP, FLOURESCENT	replace	X						
SWITCHES	replace		X					
CORD ASSEMBLIES	repair		X					
BAND, MARKER CABLE	replace		X	X			Fabricate	
CABLE	replace		X					
PLUGS, TELEPHONE	replace		X					
COVERS, AIR FILTER	repair			X				
DOOR ASSEMBLIES	replace			X				
GASKETS	replace			X				
RECEPTACLES, TURNLOCK, FASTENER	replace		X				Fabricate	
SCREENS, FILTER	replace			X				
COVERS, VENTILATORY	replace			X				
DOOR ASSEMBLIES	replace			X				
GASKETS	replace			X				
RECEPTACLES, TURNLOCK FASTENER	replace		X					
CURTAIN INSTALLATION	repair		X					
CURTAIN	replace		X					
STUDS, SNAP FASTENER	replace		X					
DISTRIBUTION BOX	repair		X					
CHAIN BEAD	replace		X					
CONNECTORS	replace		X				Separate MAC for 26 pair connectors	
COVERS, ELECTRICAL CONNECTOR	repair		X					
DOOR ASSEMBLY	replace		X	X				
GASKETS	replace			X				
RECEPTACLES, TURNLOCK FASTENER	replace		X					
TERMINAL STUD	replace		X					
DISTRIBUTION BOX, (DROP LINE BOX)	repair		X					
CAPS, ELECTRICAL	replace		X					
CONNECTORS, RECEPTACLE, ELECTRICAL	repair						Separate MAC	
COVERS	replace			X			Fabricate	

PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AN/MGC-17 (continued)								
GASKETS	replace		X					
POSTS, BINDING	replace		X					
STRIP, DESIGNATION	replace			X				
DUCT ASSEMBLY, FAN, CENTRIFUGAL	repair		X					
MOTOR, ALTERNATING CURRENT	replace		X					
FILTER, AIR CONDITIONING	replace		X					
FLASHLIGHT	repair	X						
BATTERIES, BA-30	replace	X						
LAMP, INCANDESCENT	replace	X						
GENERATOR, GASOLINE ENGINE, TRAILER MOUNTED	repair							Separate MAC
PU-322/G								
HEATER, SPACE, ELECTRIC	repair		X					
BUSHING, ELECTRICAL CONDUCTOR	replace		X					
CABLE, POWER, ELECTRICAL	replace		X					
CONNECTORS	replace		X					
HEATING, ELEMENT, ELECTRICAL	replace		X					
IMPELLER, FAN, AXIAL	replace		X					
MOTOR, ALTERNATING CURRENT	replace		X					
SWITCHES	replace		X					
HOLDERS, CABLE, REEL	repair		X					
CHAIN, BEAD	replace		X					
JACK, ASSEMBLY, TELEPHONE	replace		X					
DESIGNATION STRIP	replace		X					
FRAME ASSEMBLY	replace				X			Fabricate
HOLDER, DESIGNATION STRIP	replace				X			Fabricate
JACK MOUNTING	replace				X			Fabricate
JACK, TELEPHONE	replace		X					
WINDOW	replace			X				Fabricate
LIGHT, EXTENSION	replace	X						
LAMP, INCANDESCENT	replace	X						
PANEL, POWER DISTRIBUTION	repair rebuild		X			X		
CIRCUIT BREAKERS	replace		X					
LAMPS, GLOW	replace	X						
LAMP HOLDERS	replace		X					

(b)

(e)

(7)

(6)

(5)

(4)

(3)

(2)

(1)

PART OR COMPONENT	MAINTENANCE FUNCTION	1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
IV/MC-17 (continued)								
METERS	replace		X					
RESISTORS	replace		X					
TRANSFORMERS	replace		X					
REEL UNIT RL-31	repair							Separate MAC
SHELTER, ELECTRICAL EQUIPMENT	repair							Separate MAC
SWITCH BOX, SA-331/G	repair							Separate MAC
TELEGRAPH-TELEPHONE SIGNAL CONVERTER TA-182/U	repair							Separate MAC
TELEGRAPH TERMINAL TH-5/TG	repair							Separate MAC
TELEPHONE SET TA-312/PT	repair							Separate MAC
TELEPHONE SWITCHBOARD SB-22/PT	repair							Separate MAC
TELETYPEWRITER SET TT-4A/TG	repair							Separate MAC
TELETYPEWRITER SET TT-76/GGC	repair							Separate MAC
TERMINAL BOX	repair		X					
	rebuild					X		
CAPS, ELECTRICAL	replace		X					
DOORS, ASSEMBLY	replace			X				
GASKETS	replace		X					
POSTS, BINDING	replace		X					
RECEPTACLES, TURNLOCK FASTENER	replace		X					
TERMINAL BOARD	replace				X			Fabricate
WIRING, HARNESS	replace				X			Fabricate
	repair		X					
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CONNECTORS	replace		X					Separate MAC for 26 pair Connectors

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By Order of *Wilber M. Brucker*, Secretary of the Army:

L. L. LEMNITZER,
General, United States Army,
Chief of Staff.

ial:

R. V. LEE,
for General, United States Army,
The Adjutant General.

tribution:

Active Army:

Def Atomic Spt Agcy (5)
USASA (2)
CNGB (1)
Tech Stf, DA (1) except
CSigO (18)
Tech Stf Bd (1)
US Arty Bd (1)
USA Armor Bd (1)
USA Inf Bd (1)
USA AD Bd (1)
USA Abn & Elct Bd (1)
USA Avn Bd (1)
USA ATB (1)
USCONARC (5)
US ARADCOM (2)
US ARADCOM Rgn (2)
OS Maj Comd (5)
OS Base Comd (5)
Log Comd (5)
MDW (1)
Armies (5) except
First USA (7)
Corps (2)
Div (2)
USATC (2)
Svc Colleges (5)
Br Svc Sch (5) except
USASCS (49)
GENDEP (2) except
Atlanta GENDEP (none)
Sig Sec, GENDEP (10)
Sig Dep (17)
Army Pictorial Cen (2)
Engr Maint Cen (1)
USA Ord Msl Comd (3)
USASSA (15)
USASSAMRO (1)
USA Sig Pub Agcy (8)

USA Sig Engr Agcy (1)
USA Comm Agcy (2)
USA Sig Eqp Spt Agcy (2)
USA Sig Msl Spt Agcy (13)
WRAMC (1)
AFIP (1)
AMS (1)
Ports of Emb (OS) (2)
Trans Terminal Comd (1)
Army Terminal (1)
OS Sup Agcy (1)
Yuma Test Sta (2)
USA Elct PG (1)
Sig Lab (5)
Sig Fld Maint Shops (3)
USA Corps (Res) (1)
JBUSMC (2)

Units org under fol TOE:

11-5 (2)
11-7 (2)
11-8 (2)
11-15 (2)
11-16 (2)
11-17 (2)
11-18 (2)
11-55 (2)
11-57 (2)
11-85 (2)
11-86 (2)
11-97 (2)
11-117 (2)
11-155 (2)
11-500 (AA-AE) (2)
11-557 (2)
11-587 (2)
11-592 (2)
11-597 (2)

NG: State AG (3); units—same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

